Advance Sheets *of*

REPORT OF THE COMMISSION

UPON THE

PLANS FOR THE EXTENSION

OF

Industrial and Agricultural Training

Submitted to the Governor January 10, 1911.

MADISON, WIS.
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1911

To the Honorable Legislature of the State of Wisconsin:

Herewith is submitted the report of the commission upon the plans for the extension of industrial and agricultural training.

Respectfully submitted,

C. P. Cary, Chairman.

C. R. Van Hise.

C. G. Pearse.

L. E. Reber.

C. McCarthy, Secretary.

January 10, 1911.

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REPORT OF THE COMMISSION

UPON PLANS FOR THE EXTENSION OF

Industrial and Agricultural Training

PART I.

Introduction.

Basis of report.

The report of the Commission on Education, herewith submitted to the Wisconsin legislature of 1911, is based upon Joint Resolution No. 53, of the legislature of 1909. This resolution is as follows:

"Whereas, Reliable statistics show that there are at least 104,000 illiterates in the state of Wisconsin at the present time,

"Whereas, There is a great movement through this entire country at the present time to establish night schools and night trade schools so that workers and those who have been denied education cannot only get the elements of education but can also improve themselves in their business of life.

Whereas, The growing need of instruction to our people who cannot attend school demands from us some investigation of this great problem; therefore be it

"Resolved by the senate, the assembly concurring, That the state superintendent, the president of the University of Wisconsin, the director of the University Extension Division of the University of Wisconsin, the librarian of the legislative reference department, and the superintendent of the Milwaukee

public schools are hereby created a commission to report to the next legislature upon remedies for these conditions; and be it further

"Resolved, That the heads of these departments are hereby directed to use their respective clerical forces to help in this matter in so far as it is necessary and to hold such conferences with teachers and associations as will enable them best to work out the plans for the betterment of these conditions, provided that none of the said officers shall receive any extra compensation for their services but may receive such traveling expenses and other expenses necessary to the fullest investigation of all of these matters."

The commission created by this resolution has had frequent meetings during the more than a year and a half which has elapsed since the passage of the resolution.

Upon a careful analysis of the resolution, it is evident that your honorable body intended to have this commission investigate thoroughly the basis of education in this state. Your commission found at once that the great question of illiteracy could not be investigated thoroughly without taking up the subject of compulsory education as well as the subject of the betterment of the school conditions in general. If there are boys and girls growing up in this state who are illiterate, and if there is a crying demand, as evidenced by your resolution, that evening schools should exist, and that opportunities for industrial and agricultural education should be increased in some way, it appeared to your commission that a careful and painstaking review of our entire educational situation in relation to these grave problems must be undertaken.

Your commission confesses at once that the problems committed to it are too great and too important to be solved in the short time, and with the limited means, at its disposal. Nevertheless, your commission has felt that within the limitations imposed upon it by the lack of appropriation and time, it would not do its duty to the state unless it made some attempt to reach fundamentals and arrive at some conclusions of a constructive nature which, although they may not fully solve the problems, will draw the attention to the right principles to be used in their ultimate solution.

Our analysis has led us step by step to the conclusion that

we must consider thoroughly the great industrial and social changes which are taking place in this and other countries. Wisconsin must look around and abroad, as she does not live alone. The great problems which confront the people of the surrounding states and the dearly bought lessons from abroad must be brought home to us. Yet, they must be brought home with a full and careful analysis of the actual conditions under which our own people live. Our investigations have led us directly to the study of the relation of industry to education. It is the education of the great mass of the people, and not the education of the few, which must be thoroughly overhauled, and which must be reorganized upon a sound basis, with an eye to the conditions of the future progress of our state.

Conditions in the state.

Your committee does not wish to go into a discussion of any great length, of the present industrial status, but nevertheless in approaching the problem of industrial and agricultural education, it is necessary to outline briefly the actual conditions in the country and the state in order to understand the point of view from which your commission worked.

Whatever may have been our natural wealth in America, whatever may have been our natural advantages in the past, we must admit that conditions have changed. The agitation throughout the country for the preservation of our natural resources, the anxiety shown on every hand because of the depletion of our forests, the wearing out of agricultural lands and the danger of exhaustion of our mines, shows us that we are approaching a new economic era in America. Our country has changed from a new land of boundless virgin natural resources to a country which must husband its inheritance. The state of Wisconsin is changing as rapidly as any portion of this country. In fact, the state has become, in little more than a decade, a great manufacturing state, covered with small villiages and cities. We have now over 100 fourth class cities. We produce at least $450,000,000 of manufactured products yearly and $280,000,000 of agricultural products. We have changed our economic and social life at the same time that we have been taking the cream of our natural resources. Our future must be a struggle for prosperity in manufactur-

ing and in commercial pursuits and in intensive and specialized agriculture. We are becoming rapidly reduced to the same economic basis, and we must eventually use the same weapons in our industrial struggle, as have other countries. We cannot dodge the fact that our future commercial prosperity and the future general welfare of this country and of this state depend not on our natural resources alone but mainly upon the intelligence and the ability of the people of this country and of this state.

Wisconsin's natural resources are not so large as those of a number of other states. Her prosperity in the future is to be dependent not only upon the bounty of nature but upon the patience and hard-working qualities and the intelligence of her people. Her future greatest resource must be the superior intelligence of the individuals in their various vocations. Changing as we are from an almost exclusively agricultural into a manufacturing and agricultural state, we must provide education adapted to both agriculture and manufactures. The older countries of the world and a number of the older states in this country have already built up a great manufacturing population, and we must meet their competition while we are in this period of change.

We have then to meet conditions in this country with which our fathers did not have to contend. First, diminishing natural resources compel us to fully utilize those remaining. By study, by research, by enterprise, by training alone can this be accomplished Second, diminishing natural opportunity for the individual compels us to create that opportunity. If we desire the equality of opportunity which our fathers had, to continue, this must depend not mainly, as formerly, upon new land, or the chance to exploit mines or forests, but upon the brain power of the individual. This can be gained only through education which will fit him to meet his own needs and those of this state and country. Are we not, then, day by day nearing the period of keen necessity—the time for action under stress?

Conservation of intelligence.

Thorough preparation and scientific skill must take the place of the squandered gifts of nature and eventually the

artificial bounty of the tariff. We cannot waste our resources in the future; we shall not have them to waste. We must conserve them and use them scientifically. An unscientific worker surely cannot use the best methods unless he is taught. We must establish some means of teaching our people. It must come the same way as the development of manufacturing or the development of land—by the use of capital and the most improved business methods. The only way of developing the individual is through education; no other way has yet been discovered nor will be.

Special consideration has been given by the commission to the German system of education. The name of Germany is in everyone's mouth; because of her astonishing prosperity, that country has attracted the attention of all scholars and travelers. Germany by her wonderful system of democratic education, has met the real needs of her people. She has cultivated their intelligence, and by so doing she has cultivated her land and manufactures and built up her commerce and industrial success.

In America we have boasted of our ingenuity and of our native intelligence. These have kept us in the race, and we have kept our factory chimneys smoking. Primarily we have overcome our shameful waste of reserves which has resulted from the lack of thorough and far seeing scientific processes, by the splendid inventiveness, push, and ingenuity of our population; that is, by the native intelligence of our people. We have seen generation after generation of manufacturing people in America change until our workmen show diminished skill and ability, and in some industries, lower standards of life. When our skilled workmen began to fail us, we imported them and with other rougher help, which we had obtained from all over the world, we have kept up our progress by the splendid genius of our leaders. We have made the machine take the place of the skilled American mechanic of the past. The alert intelligence and ingenuity of the American has saved him for the present. In tool machinery, in standardized forms of various kinds, we have held our own in the past and we are still holding our own. But for how long? What of the future? How are we prepared to meet competition under new conditions? Are our children, those who must win this fight, re-

ceiving the right preparation for it? Are our masses of sturdy workers getting the foundation which is their due and upon which the prosperity, yes, the intelligence of the citizens, and eventually our industrial peace and prosperity depend? Are they getting an education to meet their needs?

Illiteracy.

It is reported by the National Child Labor Committee, taking the country as a whole, that not more than one-half of the children who went to school in the first grade go further than the sixth; that barely one in three completes the grammar school course; that only one in five enters the high school; that five-sixths of those who enter, fail to graduate. While conditions in many communities are better than here shown, the report of the Committee referred to, makes it appear that out of the entire body of pupils of the country, not more than one in thirty receives a complete education to the stage of graduation from the high school. From this small percentage of high school graduates mainly come the candidates for professional and managerial positions, and a large proportion of our business men and women. "What," says this report, "becomes of the vast majority of those young people who fall out along the way? They who are most fortunate, find their way into the skilled trades. They who are least fortunate, go to fill the ranks in the army of the unemployed."

It is evident that a large percentage of our children are not going to school. Far-reaching economic and social considerations are involved in this situation. The whole question of poverty and progress rises before us when we consider it. The future of our country and of our state and the happiness of our people is involved in the situation. No question is more momentous; no question means more to our homes and to the physical and moral well-being of our people. We cannot brush it aside as England has attempted to do, and depend upon the empty vanity of believing forever in our native ability, or conclude that Americans are a superior race of people and that it will "come out all right in the end." Our state, strong and young, fitting itself for its industrial life and for its competition with older states and older peoples, needs to take account of stock and look to the future.

Scope of report.

It was recognized by your commission that a proper consideration of the full scope of the resolution of the legislature would involve two phases of educational development: (1) Industrial education which especially pertains to cities and to some extent, villages; and (2) agricultural education which pertains mainly to the country. Both of these subjects are connected intimately with general questions of education.

The recognition of the above led the commission to appoint two sub committees to consider the first two phases of the subject. Dr. Charles McCarthy was designated by the commission as a sub-committee to make a draft of the report upon industrial education. To the preparation of this report Dr. McCarthy has given much time. He spent several months in Germany, chiefly in the cities of Munich, Coblenz, Frankfurt, Cologne, and the region about Cologne. He also visited Great Britain and studied the industrial regions about London, and in the smaller manufacturing cities of Ireland. He also spent a short time in Belgium, chiefly in Brussels. Dr. McCarthy further visited the larger cities of the east, including New York, Boston, Lowell, and Pittsburg, in which industrial education is developed.

For agricultural education a committee was appointed outside of the commission, consisting of Dean H. L. Russell, Professor E. C. Elliott, and Professor K. L. Hatch.

The reports contained herewith upon these subjects are largely the work of these sub-committees. However, they have been twice or thrice revised by the commission as a whole, and as printed they represent not simply the views of the sub-committees but those of the entire commission.

Salaries and teachers.

Closely connected with the subjects of industrial education and agricultural education is the question of teachers' salaries. In order to make the movement successful for vocational training there is the same necessity for a minimum salary law that there is for education of other types.

Our system of education for the preparation of teachers for the public schools should be so altered and improved as to give a better grade of *men and women* as teachers, and this applies

to all classes of schools. At the same time the demand is for ability and service that cannot be secured at the current prices. Thirty, forty, or even fifty dollars per month is not enough to attract men and women who must earn a living and who are really competent to do the work that should be done; nor enough to justify that thorough training necessary for proper results.

As a partial solution of this problem, the enactment of a minimum salary law has, and is, being urged from many quarters. Without doubt, such a law, framed so as to place a premium upon thorough general and special training, would accomplish much for the improvement of industrial and agricultural education. Investigations that have already been made concerning the situation in Wisconsin show conclusively that a law fixing the minimum salaries of teachers would necessitate some form of special state aid in order to enable a very large number of school districts in all sections of the state to meet the increased expenditures. The practice of certain other states, Indiana and Ohio, in particular, of setting aside each year a special state fund to enable communities to pay suitable teachers' salaries, and in other ways properly support the school, would seem to be worthy of consideration by the legislature.

American experience for a hundred years at least has proven conclusively that until the salary scale of teachers is raised and maintained at a level above that now obtaining, it will not be possible to secure effective industrial and agricultural teaching. A living wage must be guaranteed to every competent teacher, and every community in the state should be able to pay this wage without an over burden of taxation.

Special school of normal grade.

Under the present law, the state normal school graduate is qualified to teach in any elementary or secondary school within the state. But as the normal school courses of study are at present organized, these graduates can hardly be expected to prepare teachers effectively for the industrial and agricultural subjects recommended to be introduced in the elementary and secondary rural schools.

The number of teachers of agriculture and domestic science that will be required in the state, if the recommendations sub-

mitted are carried out, will be so large that some special provision should be made for the preparation of teachers for these subjects. This can probably be best done in some special school. Your Commission, therefore, recommends the development of a state institution whose prime function shall be the training of elementary teachers in industrial and agricultural subjects.

Independent high schools.

One other general statement should be made. At the present time some fourteen high schools in the larger cities, sometimes called the independent high schools, since they have not complied with the terms of the law in reference to free high schools, do not receive from the state any aid for vocational training. It seems to the commission that so far as these high schools have courses in manual arts and domestic science, and so far as they introduce courses in agriculture, that they should be placed upon the same basis in reference to state aid as the free high schools of the state.

The recommendations submitted by the commission are given below. The facts upon which these recommendations are based are to be found mainly in the accompanying papers upon industrial education and agricultural education. A number of bills will be submitted to the legislature putting into concrete form the recommendations of the commission.

RECOMMENDATIONS OF THE COMMISSION.

The Commission respectfully submit for the consideration of the legislature the following recommendations.

A. INDUSTRIAL EDUCATION.

1. Advisory Board.—That a temporary state advisory board for industrial education be appointed by the governor and that an assistant and other officers whose duty it shall be to supervise and encourage industrial education shall be added to the state superintendent's office; said assistant to be ap-

pointed by the state superintendent with the approval of the board of industrial education.

2. **Local Boards.**—That there be established in every community, where industrial education is undertaken, local boards of the same general nature as the temporary state advisory board, which board shall have similar control in their localities over industrial education and evening schools.

3. **Continuation Schools.**—That, as soon as school facilities can be provided for children between 14 and 16 years of age already in industry, they be compelled to go to school a specified time each week; that this time shall be expended as far as possible in industrial training; and that the hours of labor for such children shall not exceed 8 hours per day for six days of each week, which time shall include the time spent by each student in vocational schools.

4. **State Aid.**—That after careful investigation by the boards established for this purpose, continuation schools, trade schools, and evening schools shall be gradually established in the state, and that state aid shall be given for these purposes, under strict limitations as to methods and in such a manner that all training given in such schools can be combined into a harmonious and economical system.

5. **Apprentice Laws.**—That the apprentice laws of the state be changed so as to expand them and bring them up to date, in order that the apprenticeship system may be put in close and harmonious relation with the educational system.

6. **University Extension.**—That the appropriation for the extension division of the university be increased in order that this division may form a flexible element in the gradual development of industrial and commercial education of the state.

B. AGRICULTURAL EDUCATION.

7. County Training Schools.—That the courses of study in the county training schools be modified so as to contain not less than one unit of agriculture, and as soon as practicable two units of agriculture. It is suggested that where desirable, the services of the traveling instructors in agriculture, in item 14 below, be utilized for this work.

8. Consolidated Rural Schools.—That a central board of education, composed of five members elected at large, be created for each county, this board to have power in particular, (a) to employ a county superintendent of schools; (b) to consolidate school districts and discontinue schools when such will contribute to the betterment of education of the children; that such consolidated schools receive state aid equal to that granted to state graded schools, namely, $200 per annum for a two department school and $300 per annum for a three department school; and that additional state aid to an equal amount be granted to those consolidated schools which introduce not less than two units of agriculture or agriculture and domestic economy, provided that these courses of study and the teachers therein be approved by the state superintendent.

9. State Graded Schools.—That additional state aid equivalent in amount to that they now receive be granted to such state graded schools as introduce not less than two units of agriculture, or agriculture and domestic economy, namely, $200 per annum for a two department school and $300 per annum for a three department school, provided that these courses of study and the teachers therein be approved by the state superintendent.

10. Township High Schools.—That additional annual state aid equal in amount to that now granted for manual training be granted to township high schools conditional upon the introduction of not less than two units of agriculture or agriculture and domestic economy, provided these courses of study and the teachers therein be approved by the state superintendent.

11. Village and City Schools.—That additional state aid equal in amount to that now granted for manual training be granted to all villiage and city high schools conditioned upon the introduction of not less than two units of agriculture or of agriculture and domestic economy, provided that these courses of study and the teachers therein be approved by the state superintendent.

12. County Agricultural Schools.—That the present law pertaining to state aid for county agricultural schools be amended so as to change the amount which may be paid by the state to any one school from $4,000 to $6,000; but with the provision that if more than $4,000 be paid by the state that the county shall contribute not less than an equal amount.

13. College of Agriculture.—That the college of agriculture establish a "continuation course" for the graduates of the county schools of agriculture, to which those who have completed the so-called "short course" in agriculture may also be admitted.

14. Traveling Instructors in Agriculture.—That the appropriation for agricultural field service be authorized to provide for the appointment of itinerant instructors in agriculture, the services of whom may be utilized by counties in various lines of agricultural work.

C. GENERAL.

15. Minimum Salary Law.—That a minimum salary law be passed which shall apply to all teachers in industrial and agricultural subjects, and which while placing emphasis upon thorough-going general training shall place an additional premium upon special preparation for the teaching of agricultural and industrial subjects.

16. Training of Teachers.—That adequate provision be made in some state institution of normal school grade and in the county training schools for the establishment of courses of instruction in industrial and agricultural education and the

extension of courses already in existence of a character that will give proper emphasis to industrial and agricultural training.

17. Independent High Schools.—That the high schools in the state other than the free high schools, commonly known as the independent high schools, shall receive state aid for manual training, agriculture, and domestic economy, to the same extent that state aid is granted to free high schools for these purposes.

PART II.

Industrial Education.

Germany.

Germany started her present prosperity with poor resources; her land was poor and for hundreds of years the country was devastated by wasting wars. The mineral resources were slender, the people were not trained as the English by ages of manufacturing and commercial effort. Germany was a country of peasantry. Yet by well directed effort she changed all this. Germany's present prosperity is based upon a purposeful effort to educate her people. Her economists recognized the fact that nothing could win in the end except the intelligence of the individual man. Says Frank Vanderlip: "I have made a somewhat careful study of Germany's economic success, and in doing that I have become firmly convinced that the explanation of the remarkable German progress is to be traced in the most direct manner to the German system of education. The schoolmaster is the great cornerstone of Germany's great commercial and industrial progress. The school system of Germany bears a relation to the economic situation that is not met with in any other country." Shadwell, the author of a book upon industrial efficiency, has made a careful study of the conditions in America, England and Germany, and says: "The (German) manufacturers give liberal support to the schools and further encourage them by giving employment to the graduates, and there is no doubt it pays them. A manufacturer in Elberfield was showing me one day a length of dress material 'That,' he said, 'is going to England and it is made of English stuff. I get the materials from England, manufacture them and send them back. I pay carriage both ways, and yet I can sell this in English markets.' 'How can you manage to do it?' I asked. 'Well,' he said, 'you

see this is a nice design. There is brains in it.' It was a good answer, and I am inclined to believe the whole answer, for it pays higher wages and more for coal than manufacturers of similar goods in Yorkshire, and there are no kartells (trusts) in the business."

Here, then, is the whole German secret—brains, trained intelligence. The decline of England and the desperate efforts now being used by England to regain her prestige in the race with Germany for the commerce of the world, is a cause worthy of our profound study. America is not England, but nevertheless the lesson should not be lost upon us. The Englishman has felt that England, "somehow or another," has always pulled out of difficulties. Therefore, revelling in this supposed security, the English have not given sufficient care, until very recently, to the causes of the enormous success of Germany in manufacturing and marketing her goods.

The startling prevalence of illiteracy in our own country should at least appeal to our selfish instincts and alarm us as to business conditions in the future. Our American education, and our secondary schools especially have been our boast; for a long while they were the wonder of the world. The education of the people, "the pride in the little red school house," and the common school of our fathers has produced that intelligence which has been the healthy foundation of our homes. But we are now standing still in our own self-satisfaction with the past, while other countries are forging ahead. Our boasted democratic education yet leaves much to be accomplished if the statistics we have quoted are correct.

The Mosely commission when it came to America asked the question; "How is it that the United States can afford to pay a half dollar in wages where we pay a shilling, and yet compete with us in the markets of the world?" With just pride we could give the answer that our intelligence enters into the process of production; that the intelligence of our people (and the wages which we pay are because of that intelligence) gives us our peculiar advantage in competing for the markets of the world. If we lose this relative intelligence through a change in the character of our people and the failure to adjust our school system to the needs of the times then we lose the advantage which we have had in the past. But a school

system cannot stand still any more than a business can stand still. It must be kept up to date and must fit the needs as the needs arise, or else it must sink back.

This is not a history of the development of Germany or of the decline of England. A discussion of these topics does not belong here. There are many causes for the growth of prosperity of Germany and of the failure of England to keep pace, but there is no gainsaying the fact that there is no cause which has been of greater significance than the German emphasis upon the industrial and commercial education. The fact that the Germans are going into the commercial markets and underselling us is shown by cold, dry statistics. Their young men have been taught how to sell their produce and to meet scientifically the wants of the world. From high authority, we learn that the amount of German sales in the United States has increased nearly 100 per cent since 1900; but to the English colonies, South America, China and the entire world, German products are going in a great stream overwhelming and driving the commerce of all nations from the sea.

We have these facts before us, but your committee has not started out to copy the methods of Germany. But it has started out to study the best educational methods to be found which will in any way help us to better our conditions here. We cannot entirely apply German methods to our work. What appears to the German as superficial in our education, sometimes is the basis of that quickness of comprehension, that intuitive insight and readiness which cannot be replaced by the tremendous care and ponderous exactness of certain German methods. In a report like this we must not be misled. We must not forget that things happen slowly, develop slowly, and that peoples differ in temperament. The psychology and the general make-up of the people, and the physical characteristics of the country must be taken into account. We must not impose upon our state, methods which spoil the quick brains and originality of the Americans, or which, in any way, would tend to destroy the good things which we have; but rather we must build upon what we already have and add to it from the best of all other lands. Despite Germany's tremendous advance, the past record of the American, when thoroughly aroused gives ground for the belief that he can

duplicate by ingenius and more direct methods, at a far smaller cost, what has been done in Germany. We have a better basis from which to start.

The army drill-like plan of the German educational system will not succeed in this country. Leaders of men are born, and cannot be made by education alone. But nevertheless it is foolish to deny that the young American captain of industry needs much training and drill to supplement his natural ability and genius.

Your committee has found in Germany on the whole the most which is suggestive in formulating plans to improve Wisconsin conditions. Knowing that the time must necessarily be short, our representative confined himself strictly to the questions which are coming up in our own state, and contented himself with the examination of a few cities, and, as far as possible, of industrial conditions which are similar to those in Wisconsin. Knowing that the subject of industrial education in Germany has been often described, and that volumes have been issued on the subject, both in German and in English, he confined himself to a study of the manner in which the German system can be applied to our conditions, and made every effort to learn how much of the system can be and how much cannot be applied. Our investigator examined particularly the elements of success in the German system; the little ways of management and little points in organization which are so necessary in the beginning of a fundamental movement such as contemplated by your committee. He was impressed by the fact that the German is a scholar; he loves schools; he loves education; and is not afraid to make large investments in industrial education. He was impressed by the effort made by the Germans to educate the people so that each man could fit into the great line of economic progress. The success of this great movement, begun years ago, is now felt in Germany. It has been rolling up and gathering force; the investment was large, but wisely made, and now the nation is gathering the income.

Heavy investment in Germany.—In considering the specific causes of Germany's educational success in detail, the first point which astonishes one is the heavy investment made in

industrial education. Suffice it to say that nearly every small village has at least one industrial school, and often in small cities several are found. In Hanau, a place not very much larger than Madison, there are 5 industrial or commercial schools, including an industrial art school and also what is practically a mechanical engineering school. The equipment of some of these schools is very complete and costly, but in most instances is very economical and surprisingly simple. The buildings are well adapted to the work in hand. Some idea of the investment can be obtained from the fact that the little province of Wurttemburg, which has a population less than Wisconsin by at least one-fourth of a million persons and which is on the whole a poor, hilly country with very poor transportation facilities, has, besides its splendid system of elementary and secondary schools, about 250 industrial schools in its towns and villages, 1 knitting school, 3 weaving schools, 2 industrial work shops for actual practice in weaving, 2 technical schools for textile and mechanical work, a large state university, a technical university, a royal building trade school (a trade school for building purposes), a great commercial college, several commercial improvement schools, a great agricultural school, many farming schools, similar to our county agricultural schools here, an art trade school for industrial art, a pure art school and many miscellaneous schools of all kinds for workmen of various grades, evening schools, continuation schools, etc., including schools in domestic economy for women. The tremendous investment made by this little province is far beyond anything of which we, in our prosperity have thought.

The same thing can be found in nearly all the other countries of Europe today. France is full of state supported industrial high schools, commercial institutes, industrial schools of various kinds. The investment of the different cities of Switzerland and Belgium has been tremendous.

In one of these schools in Munich, our investigator found equipment and work-shops in the following work: electric motive power; electric lighting; locksmith and machine forging; book printing and lithography; cabinet making; stucco work; carving; chain making; metal work; plumbing fittings; tinsmith work, and photography. There are in Munich about sixty continuation classes. A great many industrial schools are

maintained both by the city of Munich and by the kingdom of Bavaria.

The amount of money invested in these schools shows that these countries realize the importance of this work, and are not afraid to invest in it, as the results obtained have been so wonderful. They are not waiting for something to happen and endeavoring to remedy conditions at heavy cost as the English and the Americans seem to think the right way to do. They are investing heavily for the future.

Practical nature of the work.—Almost without exception there is in Germany a correlation between the industrial conditions in the cities or towns in which these schools exist and the industrial schools. In fact, it is impossible to define exactly a German industrial school. Each city meets the problem differently. Each tries to adapt the teaching to its own needs and sometimes the curriculum in a school in a certain village is entirely different from that in every other community. The schools are a striking reflex of the industrial conditions of the communities in which they are found. The reason for this can no doubt be found in the gradual growth of these schools and in the masterly way in which the German has determined to make them meet the wants of the great masses of the people. Instead of starting with a few costly trade and technical schools as we have done in America, they have encouraged a gradual growth in the entire field of industrial education, and they have put the emphasis upon the average man of an industry and the teaching of the average workman at the bench or at the machine. They have realized that the success of an enterprise depends in the long run upon the men in the ranks. The Germans have realized that in ages gone by, other nations have not met success by merely educating a few at the top and neglecting the men in the ranks. They have realized that such an education has not brought the results that it should; that the various civilizations of the past have declined because the average man has not received the help he deserved. The great German statesmen and economists have evidently been wise in their selection of remedies for their condition. They are now putting as much strength into building up the average man—the average workman—as in building up the higher education, although the investment

in higher institutions is as great in proportion as ours, if not greater. The technical schools of collegiate grade are splendid, yet is is to these miscellaneous continuation schools that Germany owes a great measure of her success.

Continuation schools.—Your committee believes that it is the German industrial continuation school which especially deserves our study. Having considered the statistics showing the percentage of children who are to be fitted for industrial life in America, your committee believes that our greatest efforts lie in doing something where nothing has been done—in meeting in some way, however meager, the immediate wants of the many. The German continuation school is made possible by the fact that practically everyone is compelled to go to school until he is 14 years of age. From 14 to 18 he is compelled to go to school a certain portion of his time. This would average perhaps a day in a week. He may go to school in some places from 4 to 6 in the afternoon; in other places and other trades, 2 mornings a week, and in still other places (and this is the popular way) he may go to school for 1 day in a week; *but he must go to school.* The reason for this is the sensible way in which the Germans have studied out a plan for replacing the apprenticeship system, now worn out because of the growth of the modern factory system and the minute division of labor entailed by this system. Formerly a man could learn shoemaking; he was apprenticed to a shoemaker for 3 to 4 years and taught his trade. Now there are many distinct processes in shoemaking and the result is that the workman who is learning one of these processes, does not learn the others, and consequently is thrown out of work with any change in that particular process. Perhaps he is thrown out of work just at the time when he is supporting a family or trying to pay a mortgage on a little home. The Germans, taking the remnants of the apprentice system, which of course still exists here and there, have added to it the continuation school.

The apprentice in the jewelry firm begins work, we will say at 14 years of age. On Friday or Saturday he has to go to school. In that school he may have one hour of German, one hour of free hand drawing, one hour of plastic design, one hour of commercial geography and in general everything

which will give him a broad view of the other departments of the work in which he is engaged. If he is a merchant's clerk, he may be given a course in a mercantile continuation school, which would teach him how to buy and sell, do accounting and to understand the general features of a thorough commercial education. Everything is applied directly to the business in which he finds himself, and which perhaps in his own town or village is a specialty. For instance, the city of Hanau is largely engaged in jewelry work. Instruction in selling jewelry and the manufacture of jewelry is the chief work of the continuation school. Continuous classes are held in most cases so that in the industrial school where boys between 14 and 20 years of age and even men up to 25 or 30 go to school from 2 to 4 years to learn trades, there are also many boys coming in every day of the week from different manufacturing establishments. Evening classes are also held, but if a boy goes to an evening class, the manufacturer is compelled to allow him a certain number of hours each day away from his work, so that the total number of hours for the evening school and day work is not greater than one day's work. This is also the law in Scotland. The classes are small in these schools, and the "task" system is so used that a class may include one boy who is doing very elementary work, and another who is finishing the highest task given by the teacher. The consideration of these questions and their application to the conditions in Wisconsin will be taken up later.

The following is a brief abstract of the imperial law of June 1, 1891, relating to the establishment and regulation of these schools in Germany. It is taken from a bulletin prepared by Arthur J. Jones for the United States department of education.

> "Sec. 120. The masters in any branch of industry are bound hereby, in the case of their workers under the age of 18 who attend an institution recognized by the authorities of their district or their state as a continuation school, to allow them the time fixed as necessary for such institution by the authorities. * * * Through the ordinance of a district council or any wider communal body, attendance at a continuation school may be made obligatory for all male workers under the age of 18. In the same way,

proper regulations may be made to secure the execution of such an ordinance. In particular, regulations may be passed to insure regular attendance and to determine the duties of parents or employers in this respect, and notices may be issued by which organizations in the continuation school and a proper relation of the scholars to it may be assured. From the compulsory attendance based on such an ordinance are exempted only those persons who attend another continuation or technical school, provided that the instruction given in such school be recognized by the higher authorities as a complete equivalent for that given in the general continuation school (allgemeine Fortbildungschule) * * *

"Sec. 150. A breach of section 120 of this law is punishable by a fine of not exceeding 20 marks, or, in case of non-payment of such fine, by imprisonment for a term not exceeding three days."

The law is not compulsory in the whole empire, but allows every division to establish this system. The result is that the continuation schools are much more highly developed in Bavaria or Wurttemburg than in Prussia.

The manner in which these schools touch every phase of life can be comprehended by a glance at the following tables of schools in Munich taken from the second annual report of the commission of industrial education of Massachusetts:

I. LIEBHERRSCHULE (UNITED TRADE CONTINUATION SCHOOLS).

Industry	Number of classes	Hours per week	Period of required school work (Years)
Bookbinder	3	9	3
Turner	1	9	3½
Druggist, sundries and colors	5	9	3
Glazier	2	8	3
Chimney sweep	2	6	3
Coachman	2	7	3
Stone and brick mason	2	7½	3
Saddler and trunk maker	2	8	3
Cooper	1	9	3
Lockmaker (building and artistic locks)	6	9	3
Smith	2	8	3
Joiner (building and cabinet maker)	5	9	3
Upholsterer and decorator	6	7½	3½
Potter and stove builder	1	7½	3
Watchmaker	1	9	4
Wheelwright	1	8	3
Carpenter	2	7½	3

II. FRANCKSCHULE (UNITED TRADE CONTINUATION SCHOOLS).

Industry	Number of classes	Hours per week	Period of required school work (Years)
Bookprinter and typesetter	10	9	4
Lithographer-Lithographic printer	4	9	4
Machinist (iron turner, iron moulder, boiler maker, machinery blacksmith, and pattern maker)	11	10	4
Mechanician (electrician, worker on light or heavy machinery, optician)	13	13	4
Metal caster and chain maker (also chaser, metal turner, metal grinder and modeler)	6	8	4
Photographer and zinc plate worker	3	10	3
Lockmaker (building and artistic locks)	6	9	3
Joiner (building and furniture)	3	9	3
Plumber, fitter, metal turner	6	8	3
Stucco worker or ornamental sculptor	3	9	4
Tinsmith	1	8	3

III. ELIZABETHSCHULE (UNITED TRADE CONTINUATION SCHOOLS).

Industry	Number of classes	Hours per week	Period of required school work (Years)
Coppersmith	3	10	3½
Lockmaker (building and artistic locks)	3	9	3
Joiner (building and furniture)	3	9	3

IV. GOTZINGERSCHULE (UNITED TRADE CONTINUATION SCHOOLS).

Industry	Number of classes	Hours per week	Period of required school work (Years)
Lockmaker (building and artistic locks)	3	9	3
Joiner (building and furniture)	3	9	3

DETACHED TRADE CONTINUATION SCHOOLS.

Industry	Number of classes	Hours per week	Period of required school work (Years)
Bather, barber, wig maker	6	8	3
Baker	9	6	3
Fresco painter, varnisher	12	7½	4
Gardener	3	7	3
Hotel keeper (including hotel carving)	10	8	3
Wood carver	1	9	4
Jeweler, gold and silver worker	3	9	4
Merchant	27	10	4
Confectioner, pastry cook	3	8	3
Butcher	4	6	3
Tailor	7	8	3
Clerk and office assistant	2	8	3
Shoemaker	3	9	3½
Gilder	2	8	3
Dental worker	2	8	3

The course of study in the industrial continuation schools for machinists' apprentices in Munich is as follows:

Subjects.	Hours of Instruction			
	Class I	Class II	Class III	Class IV
Religion	1	1	1	.....
Trade calculation and bookkeeping	1	1	1	1
Business composition and reading	1	1	1	.....
Studies of life and citizenship	1	1	1	1
Mechanical drawing	3	3	3	3
Physics and mechanics	2	1	1	2
Machinery	.....	.....	1	2
Materials and shop work	.....	.....	1	2

In the begining, only a few of these classes were organized as the need became evident. There always remained boys in unskilled or miscellaneous work. General continuation classes were founded for them, and as courses could be provided for special trades or pursuits, separate courses were instituted for such trade or pursuit. Those who remained in the general courses, were given general manual training, literature, arithmetic, citizenship, etc. Schools of like nature exist for girls, and special classes have been rapidly organized in the different work in which the girls are employed. Above the continuation course are a great variety of schools, lower industrial schools, middle industrial schools, higher industrial schools, and special schools of all ranks and descriptions, apparently not strictly classified and differing in curriculum and standard from city to city and from division to division of the empire, making a whole great irregular democratic educational system, fitted to the needs of the different localities in a wonderful manner, and meeting the conditions much better than if they were regularly classified and standardized.

Administration.—After a very severe trial, reaching over a period of years, it was found that the inevitable tendency of all industrial schools was to become theoretical and to turn out theoretical students rather than practical men who would be of use in building up the industrial resources and commercial prosperity of the country. The history of this education in Germany shows that the attitude of mind of the ordinary school teacher does not allow him to take hold of this problem and work it out as it should be worked out. It is necessary to have some check upon his theoretical inclinations and to give some aid to him in the practical solution of industrial questions.

After a long period of trial, the Germans have established almost universally, local committees of business men, manufacturers and workmen who control these schools, wherever they are. The result is that the manufacturers and the working people take the utmost pride and interest in these schools, and watch closely their development. They are naturally looking after their own interest, and in so doing help the industries in which they are engaged. In talking with the heads of the industrial schools in Germany one is impressed by the fact that

these men always say that if the employers would only allow them to have the boys for full time or have them for longer periods and would not interfere so much with the management of the school, that they could do splendid work. Of course it becomes apparent after careful examination that their complaint is groundless. The general history of indusrial education in this country, as well as the German experience, shows us that if these schools are all put on a full time basis, the boy who works in the factory and earns his living after he is 14 years of age is gradually crowded out and schools are formed which turn out engineers professional or cultured men, but which do not meet the needs of the great mass of the people. If these were all full time schools and the principals allowed to do as they pleased, the schools would not meet the demand as they do now. They would not reach as many boys. It is far better to have the management of the schools in the hands of the employers and employees than to be hampered by the theoretical standpoint which inevitably would result if the teachers or school men had it all in their own hands.

Of course there is this tendency; that if the practical men control it entirely they will work with purely commercial motives, will not be far-seeing, and will be tempted to get quick results rather than to build deep foundations. Nevertheless so strong has been the tendency to theorize in this work that the manufacturers and employers of Germany just barely hold their own in keeping the teaching from becoming too theoretical. Even with these precautions and all these checks, there is no doubt that if there if a fault with the splendid system, it is on the side of too much attention to theoretical and technical work. There is a constant pull in that direction, and the only thing that has saved the plan has been the great, sound, common sense of employers and employees.

Teachers.—Another great element in the success of this work is the kind of teachers employed. Formerly, before any attention was given to the fitting of teachers for this work, teachers from the ordinary schools were employed. The result was not good. The securing of teachers well grounded in new methods was one of the hardest tasks in the entire German industrial educational scheme. It has not yet been settled. It was easy to get teachers of manual training with pedagogic ideas, but it

was hard to get practical workers who could teach practical things. The practical worker was not always a good teacher. Every means has been used to get the right kind of teachers. Very wisely indeed the Germans have paid the teachers in this work higher wages than for similar grades in the other schools; they have laid the stress and emphasis upon this work. In almost every place one sees men teaching in these schools who are really artists in their work. The committees of manufacturers and employers see to it that this is the case. A theoretical or unfit teacher has a hard time of it under the sharp and vigilant eyes of these local committees. Special inducements have been held out for good workmen. Private rooms have been furnished in the schools where they can carry on their researches in chemistry; where they can design new patterns in fabrics; where they can work in the arts and crafts or sciences; or where they can manufacture beautiful ware or design industrial patterns for themselves. Every man has, in fact, a studio.

Recently, special schools for teachers in industrial teaching have been founded, where men and women are specially trained. The Germans have realized that after all it is the trained personality that does everything. It is not the equipment, but it is the person. It is not the building, but the human being who makes the things, and the human element in this, means success in Germany even if the huge equipment and investment did not exist.

Task system.—There is another element which has been neglected by most of the investigators of the German industrial educational system. That is the "task system" which is in vogue there. Small classes of from 16 to 20 are usual, and the "tasks" are assigned for each member in the class. All who are prepared alike begin at the same "task." If a boy has but one day in the week in which to do his work, he can come in and work at his "task." It may be that he has to make a piece of stucco design work. When he has finished that, he will go on to the next "task." Right beside him in the room are men who are perhaps working every day, learning a trade in the trade school. These men of course have many more "tasks" completed than the part time student but are under the same teacher. Perhaps some one is working a few hours at night or some part of the day. One man may be working

at "task" number 3, another at "task" number 20, another at "task" number 60, but 16 of these men constitute 1 class under 1 teacher. It is a question of individual ability and the amount of tasks completed rather than a question of a certain amount of time put in to advance a grade. The whole thing adds to the simplicity and economy of management. In the small village, instead of having 1 evening school, 1 art school or 1 industrial school, these are all combined in 1 building and the only division is the division of time of the teacher or teachers who oversee the different kinds or work in the building.

How can German methods be applied in Wisconsin?—All of the foregoing is descriptive. It is the summarized statement of what actually exists in a foreign country. It has no merit over reports which have come out upon this subject except in the fact that it is summarized. Can we take the methods which have been found successful in these other countries and apply them to our state?

There is no doubt we have different conditions in Wisconsin from those in Germany, but there are certain elements in our life in Wisconsin which are not so very different from those in that country. Germany was originally a farming country; it had to undergo a very great change in order to become a great manufacturing country, as well as a farming country. We in Wisconsin are developing our manufactures as well as our agriculture. We have much of the German blood in our population; we have a growth of small manufacturing villages where many of the farmers' sons are being turned into workmen in the factories. Wisconsin, then, is becoming gradually a state of small manufacturing towns, either German or Scandinavian for the most part, which have grown up around small factories. Our problem, then, is very similar to that of Germany a few years ago. Germany has now 40 or 50 years' start of us in industrial education. We find that there are few evening schools in Wisconsin. We find that there are at least 104,000 illiterates in our state, a large part of them recent immigrants; we have but 2 public schools teaching industrial employment other than agriculture; we have many private business colleges, we have business training of a certain kind in our high schools, and we have some Y. M. C. A. evening classes; but on the whole, this vast field of industrial education has been

neglected. It is true we have the compulsory school law passed a short time ago, which compels school attendance up to 14 years of age. This law is not yet working as it should be, but we have found that it is of great service to us. If we did not have compulsory education in this state, there is no doubt that we should not have so many children in school as we now have. We have made a tremendous investment in our common schools. Yet the Germans have recognized that if it is proper to use compulsion up to 14 years of age, it also should be used beyond 14, if idleness and unemployment are to stop, if the formation of drifting, masterless groups of men such as one sees already in England is going to be prevented. It is hard for us to learn the lesson, but there is no escape from it.

EXISTING REMEDIES

Manual training.—A consideration of manual training in this connection is demanded. The introduction of manual training into the high school in Massachusetts in 1874 was thought at that time to be a great progressive step in the field of industrial education, and no doubt it was; but nevertheless it has failed to accomplish what was fully expected of it in that it has not provided industrial education. Manual training in the high schools has served its educational purposes; but has entirely failed to give industrial training.

Massachusetts has carried on evening classes for a long time with some kind of success, and there are thousands of men in America who owe all they have to such classes in the cities in the East. In Wisconsin we have few evening classes, and we have begun in a crude manner to build up manual training and domestic science in our schools, and we have also a few agricultural schools, but can we follow Massachusetts in the establishment of continuation schools and industrial schools similar to those in Germany? Whether the state of Wisconsin can do this or not is a matter for us to discuss. Massachusetts is a closely knit manufacturing state, much older than ours, and we cannot hope perhaps to do all at once, that which has been done by that state. But your committee believes that it has worked out a plan by which we can make a beginning in this state.

Wisconsin agricultural schools.—Strange as it may seem, we have done as much perhaps for this state through certain kinds of industrial education as has Germany. We have, in Wisconsin, industrial education as good as now existing in Germany and furnishing to us perhaps a model and in some ways a solution of the whole question. Certainly there is not in Germany any industrial education which has been more effective than that of our agricultural education. Considering that for a moment, let us examine its elements of success. Compare it with the elements of success which we have stated as being the basic conditions of German industrial education.

We find first, there is a tremendous investment in agricultural education made up partly by local government, partly by state government and partly by federal government. There is at least $325,000 a year spent in agricultural education in the state of Wisconsin. There has existed for nearly 40 years in the University of Wisconsin the agricultural college, and the short course has existed at least 20 years. This investment now, together with the equipment of 5 agricultural trade schools as we may call them, or county agricultural schools, goes well into a million dollars. The result of this has been prosperity for the farmers of our state. Asking the question again—what are the elements of success? Investment is evidently one of them.

Forces making for success similar to those in Germany are in existence here. The men in the agricultural experiment station of our agricultural college in the University do practical work and devote all their time to it. We have excellent teachers but these men are investigators as well as teachers. Another parallel to the German conditions exists in the establishment of a separate division of the University for this work and separate agricultural schools, just as the Germans have worked through separate trade schools and separate industrial education systems. We have had practically a separate administration and separate funds for our agricultural college. We have done an immense amount of research work and we have paid our agricultural teachers well. Still another element similar to that in Germany is the part time system at the university,—the short course in agriculture which has turned out the farmers in this state. These short courses have been practically continuation schools. Boys have come into these schools who are actually

farmers, and have learned how to solve their problems. The only element which we have not in this matter, and which the Germans have, is that of compulsion. If we had compulsion and if we had more classes in agriculture and a greater number of agricultural schools in this state, and a greater emphasis upon the commercial and business side of agriculture, there is no doubt that we could do for this state as much as Denmark has done for agriculture. It is only a question of investment, of right methods, of teachers, of practical work; all these things have been essential to our success here, and they teach us that the elements of success in Germany are very much the same as the elements of success here. What has been successful in agriculture can also be successful in industry and in business in general if the plan is carefully worked out. There is no use trying to do for business and manufactures of this state what we have done for agriculture unless we adopt to a large extent the same methods. We must have the investment, we must have high class teachers, we must have the practical point of view, we must make the same practical experiments and research, and we must meet the demand wherever it may lead us.

Compulsory industrial training until 16 years. To make the whole system efficient, to get it in working order as quickly as possible to meet the conditions in our state, we must use in industrial and commercial education in addition to the methods used in the agricultural work, to some extent, the compulsion system which the Germans have used. The opposition will come and the difficulty will begin, right at this point. A keen analysis, however, will show the necessity of compulsion. The artisan in the factory is not on the same economic basis as the farmer's son. He exists under conditions which are not similar to those of the farmer. The farm is often a school in itself; the factory leads to physical degeneration and artificial conditions of life. The farm boy does not need the compulsory education to the same degree as does the boy in the factory. We have already recognized this fact by exempting the farm boy from our present compulsory education law.

However distasteful compulsion may seem to us, (and it is distasteful both to the English and to the Americans) we cannot allow the young boys who are coming out of school now at 14 years of age to drift into offices as messenger boys or errand

boys and drift along into one unskilled occupation after another until they finally fall into the great unemployed class. The boy on the farm has something to look to compared with the boy who goes out of school at 14 in a factory town. What has he before him? If he learns a trade it is nearly always, under present conditions, only part of a trade. All authorities insist that there is scarcely anything for him between 14 and 16 years of age except desultory, unskilled work. He is not physically strong enough to begin apprenticeship in a great many trades. He is drifting along with the tide. The doors to the future are closed to him. He is up a "blind alley." He has to take what he can get, and that does not mean real instruction, stimulus or progress. The English are trying to delude themselves with the idea that they can accomplish what the Germans have without compulsion. They point to their evening classes, but a consideration later on of the situation of the evening classes in England shows that they are not taking the proper step to correct this evil, and England is overcrowded with drifting boys and girls, and poverty, idleness and lax morality is increasing. The wisest minds in England are just beginning to comprehend that compulsion must be used. All other means have failed. We should not make the mistake here; we must meet the question fairly in all justice to our children and in all justice to the economic welfare of our state. Far better is it for the state to use compulsion and see to it that the boys between 14 and 16 at least, go to school a certain number of hours a week, as under the German continuation school plan, so that they will be compelled to learn the broader aspects of whatever business into which they drift, so that they will learn some of their duties to the state and some general skill which will prepare them either for apprentice courses or for whatever work may come up in the future. We must not allow them to drift, but rather guide them into habits of industry and point the way to remnuerative and healthful work fitting to their ability. We must open the doors of opportunity before them; we must save these two years at least from exploitation and waste.

Although it is well established that the boys between 14 and 18 in trade industries are of relatively little economic use, yet the statistics show that they are in such industries in minor places, and their numbers are still on the increase. The high school will not solve the problem. It is well known by fathers

and mothers in industrial cities that if a boy goes to the high school until 17 or 18 years of age and then graduates, he seldom goes into industrial employments. He feels above work in the factories or the learning of a trade. He has gone by the psychological, critical period, when he should begin a trade. He has not money enough to go to college. Such children form a discontented, useless element. The fathers and mothers have learned this in factory towns and now they are putting their children to work as soon as they get through the common schools, which is usually between 14 and 16.

The state of Wisconsin should have for its aim, the adoption of the "Scotch law" as soon as adjustments can be made locally and schools provided, that is, compel the attendance of boys and girls to 16 years of age at some continuation, industrial or evening school a certain number of hours a week. If they go to evening school, the total number of hours in the day should not exceed 8 hours for children under 16 years. The reason for this will be given more fully when we discuss the evening school. Perhaps some arrangement might be made in some trades so that a certain period in the year could be given off by the employers and the pay be continued during that period; thus making a condition very much like the short course work in agriculture, with compulsion added.

We are aware at once that many manufacturers will say that compulsion is impossible, or that such arrangements which we advocate here under the actual conditions in manufacture, are impracticable. Your committee is also aware that the forces which fought child labor legislation in this state will no doubt fight the compulsory continuation school law. It will be said that it is impossible to let a boy leave his work one day a week because of the fact that the child is working in a system requiring minute division of labor and is doing a small but necessary part of the entire production, and if the child stops for any period then the machine must stop or some skilled employees must be delayed. The child, although a small and weak link, is still a link in the chain.

The same argument was advanced in Germany. The answer to this as the statistics given by the Wisconsin bureau of labor show, is that there are comparatively few children employed in factories, mercantile and correlated industries in Wisconsin less than 16 years of age. There were but 6,345 permits issued last

year. Some of these were not used, or were used for a very short time. On the other hand children working on farms or in domestic service were not included. It is true that some adjustment will have to be made in certain trades, but of these children it is safe to say that at least one-half are working at tasks, the absence from which for a day or a week will not stop the work or interfere in any way with the process. The statistics collected by the Wisconsin bureau of labor show that but 360 were used in machine tending. Where children are engaged in packing, labeling, counting, errand running, the matter can be easily met. In Germany the classes are made to accomodate these conditions. In some trades one whole day is given; in some others, two half days; in others, evening classes; and in this way the hours are made to fit into the occupation. This has caused very little trouble to the employer, notwithstanding the fact that German continuation schools are compulsory until 18 years of age.

We have learned from experience, however, in this state that mere compulsion will never be of the greatest service. Although we have compulsory education today in the common schools, we find that many boys drop out the first moment they can. They are tired of school. Here compulsion without proper methods, proper teachers, without those practical things which have made Germany successful in this work, will never accomplish the results sought. A lack of patience with compulsory education is manifest at the present time. Honest men who have not studied school systems call compulsion a failure. Mere compulsion is admittedly a failure, but compulsion combined with good methods is not. In Germany the amount of compulsion is regulated locally. The statistics given of education in Prussia (where there is local option in the matter of compulsion) show that the schools where compulsion is used, are progressing, while those where it is not used are going backward. The students in compulsory industrial schools increased from 174,494 in 1904 to 286,822, in 1908, while those in non-compulsory schools decreased from 27,222 in 1904 to 17,659 in 1908. The same relative decrease is shown in commercial continuation schools.

Analysis of data in M. E. Sadler's book on continuation schools in England, shows us that "of the 195 firms representing some of the chief trades and industries in England to whom inquiries were sent, 67 replied. Of these 67, 49 excused ap-

prentices from day work to allow of their attending classes. The time allowed is from half a day to a day a week." That is, many of the public spirited manufacturers of England recognize that they can give part time off, and they do so. The pity is that the other manufacturers who are not as public spirited are not compelled to do the same. No stronger argument can be used in favor of compulsion. Certain manufacturers can do it, evidently, in England, and others will not do it. The fact that such a large percentage do do it, refutes the argument that compulsory allowance of time during the day to employees is impossible.

The Wisconsin bureau of labor report has the following to say about the question of the reduction of hours of labor of children in order to allow for industrial education: "A few states have already effected a reduction in the legal number of hours of labor of children without serious consequences to industry, and the eight hour day is regarded as the goal for those workmen who are able to protect themselves. Why should it not be the goal for those who are unable to protect themselves? The eight hour day would not be inconvenient in factories whether employing either 1, 2 or 3 shifts and the other employers of labor would have less difficulty in adjusting themselves to such a legal limitation."

Your committee recommends an eight hour day in this state for children under 16 years of age. If this were brought about in all industries it would be a great step towards the carrying out of the plan as outlined by your committee. The child would have the option of going to evening school or day continuation school. Such a system would inevitably lead to the establishment of day continuation schools but would allow for adjustment in some cases. It seems also to your committee that this Scotch law with an eight hour limitation could be well extended to 18 years in certain industries of a trying nature or in which, because of danger to the public, the pupils should have a special training. From the attitude of railroads of this state and throughout the country it would seem that no opposition would be met from them if the limit were extended, and therefore your committee has prepared a bill extending the limit to 18 years in railroad work.

If the methods of compulsion now used in the schools of

Wisconsin are still defective, then we must not apply such antiquated and inefficient methods to compulsory industrial education, but must improve the compulsory methods now used in the elementary schools and use efficient methods for both the elementary school and the continuation school. For this reason your committee has planned certain improvements in the compulsory education law with a view to the application of this law to compulsory education in continuation schools for boys and girls in industry between the ages of 14 and 16.

Compulsion to 16 years of age will not be a hardship on the manufacturer and the employer, nor will it be on the parent or on the student. It is well known that the interest and enthusiasm shown by the ordinary boy in these German compulsory continuation schools is far greater than that shown by the student in the last years of the elementary school. The reason is simply that his interest is absorbed in solving the problems which meet him every day in his work. The manufacturer or employer is making an investment in the future of his business and the parent has a way open to him to give to his children better preparation for life. It is an investment on every hand and it can be carried out just as well here as in Germany. All over this country part time schemes have sprung up in a voluntary manner, reaching, it is true, only a few people, but these, as the statistics given by Professor Reber show, indicate that the thing is possible in America. The part time system in continuation schools of Cincinnati, the part time schools of Boston, all show this. It is not hard to make this readjustment or to work out these methods; and compulsion which usually runs between 14 and 18 in Germany certainly should not be a hardship between 14 and 16 in America. As our plan here necessarily includes a study of evening schools, trade schools and other means of educating workmen, these factors will be discussed so that the whole plan can be seen as a unit and the place of compulsion and of the proposed legislation can be definitely set forth.

CONTINUATION SCHOOLS

We, to some extent, have been discussing continuation schools, but a consideration of these schools as applied to our conditions deserves a more complete analysis than we have thus far been giving them. How can continuation schools be established in Wisconsin?

First of all, the continuation school is not a high school. We are considering, when we speak of the continuation school, what we can do for the 80 to 90 per cent of those who never go to the high school, but who go into industry upon arriving at legal school age.

Your committee recommends the establishment of continuation schools as the first step to be taken in this state, for the reason that these schools seem to meet our needs better than any other system. It is not a perfect system, it is not the most highly scientific system; but it does something where nothing has been done. It meets the broadest aim and it will at once reach the greatest number at the least cost.

Again, your committee believes that the industrial educational need of this state is not going to be supplied by the establishment of trade schools here and there in cities which can afford them; but that a complete system adapted to the whole state, meeting the needs of people in the smallest villages as well as the largest cities, must be installed or else the problem will not be solved. It is comparatively easy for a large city to establish a trade school, but what can be done with the boy or girl in the village store or in the other varied employments of life, scattered in small places throughout our state? That is the question. The success of our plan must be tested by its results in dealing with such cases. If we had money enough we could easily establish in every village in Wisconsin a trade school, but would this meet all the need? What kind of a school would it be? What would it teach? Would it reach the 80 or 90 per cent of boys and girls not in school? We have not the money to set up these schools, nor would we know at once where and how to apply it if we did. There are two places, however, in which we can expend money, and where we must expend it. All of the children of this state between 14 and

16 years of age who are in industry must have their educational needs supplied. The only so far found successful way is the German continuation school.

We believe that the state of Wisconsin instead of relying upon the establishment of trade schools such as have been set up in the thickly populated state of Massachusetts, should begin at once a plan of providing for this period of 14 to 16 years of age by means of continuation schools. In that way we can reach the greatest number at the least cost and we can allow the system to grow gradually and with the best results. It is the general agreement of all investigators, as has been stated before, that boys are not generally wanted as apprentices before they are 16 years of age. Therefore if they leave school at 14 they practically waste their time. A more careful analysis, however, will show us that it is only in certain trades that boys are not wanted before they are 16, and those are the trades which require physical strength. There are trades, also, in which the apprentice system has not broken down completely. The investigations of child labor for the past 10 years, and the strenuous opposition put up by certain employers to the child labor law, show that there are some employments in which children under 16 years of age are of service. The statistics of children actually in industry under 16 years of age show a great and increasing number thus employed. No doubt this is due to the subdivisions of trades and to the increasing use of machinery which can be tended by children. The report of the Wisconsin labor bureau on children in occupations under 16 years of age shows that there were but 35 children in the building trades (in which apprenticeship still exists), while there were 2,640 in factories and workshops. It will be apparent at once that the building trades require probably more physical capacity than the other trades of a lighter nature in workshops and factories. Of those in the latter institutions, 356 were engaged in sewing, 318 in leather work, 529 in retail stores, 350 in offices, in knitting 260, in wood work 268, in hardware 272, in food making, such as candy making, icing cakes and cookies, canning and bottling, sausage filling, etc., 214. Most of these occupations are very light, and physical strength is not required, while some of them, such as the leather trade and the textile trades, are very much subdivided and require the quickness of children. It is evident from the reports that conditions

similar to those in England are rapidly forming in our state. It is certain that many of the children from 14 to 16 have very little outlook for the future in the occupation in which they are engaged and have begun no particular preparation for life work.

Shadwell in his book, "Industrial Efficiency," says of England: "It is a fact that a very large proportion of boys never learn or attempt to pursue any trade at all. They follow the line of least resistance and as soon as they are released from school and often before, they begin to earn money by unskilled labor, as errand boys, shop boys, van boys, newspaper boys and other occasional occupations. There is always a demand for their services and the temptation is to many irresistible. Thus they grow up without any special knowledge or skill. As they grow older and cannot live on boy's wages, they are thrust out by the constantly renewed supply of younger lads and drift into the ranks of occasional or inefficient labor."

The above can be applied to Wisconsin almost without the changing of a word. We have conditions similar to those in England and they are rapidly getting worse. The report of the Wisconsin Bureau of Labor for 1910 shows that only 12 per cent of the children employed under 16 are in positions to learn a trade. These, our report says, are in the building trades, millinery, dressmaking, trunkmaking, core making and tinning. It will be recognized in some of these, however, that it is very probable that only a slight division of a trade can be learned. As the report states, 88 per cent of the children are in occupations of the merest mechanical kind where skill is not developed or encouraged for that matter to any great extent. Says the report: "The great problem from the point of view of educational value as presented by the larger number, apparently more than three-fourths of the total, who are engaged in tasks in which it was not found possible to ascribe any benefit other than the wages earned. The simple routine tasks to be performed in many factories are detrimental both to mind and character. A large number of children are employed in leather, box, candy, bag and net factories, where practically no thought is required to perform the labor. Children working in these employments either become stupid and mechanical or quit work and drift from place to place in quest of something more inter-

esting. Failing to find congenial work, they drift away from settled and wholesome habits." Equally injurious is the work of a considerable proportion of the messenger boys.

Whatever fine theories we may have, it is apparent that we are not meeting the needs of this class of people. The high school will not meet them; the trade school can meet them only to a certain extent, and we cannot meet them without compulsion; that is, children will not go to school voluntarily; parents will not make them go to school, and many employers will not allow them to go unless the state requires it. It is apparent that a wider moral, mental and manual training is needed in order to supplement this narrow deadening industrial status in which they find themselves. The only way your committee can see possible is that of the compulsory continuation school. It is very apparent that many of these industries hire boys and girls temporarily because they are cheap, with no intention of keeping them after a certain age. But should a boy who is in the leather, hardware, or wood-working trade be discarded at 16, 17 or 18? Men are needed in these industries. In fact there is in many of them a demand for skilled labor which is greater than the supply. If boys can be supplied with an incentive to learn something about the broader aspects of a trade while actually engaged in some manual mechanical process connected with it, many of these boys will take up with enthusiasm work of this kind, progress in it, and eventually fit themselves to fill skilled and well-paid places. What is needed for this boy is a sort of quasi-apprenticeship which will provide an opening from these temporary positions into a permanent trade or a permanent well paying position. High grade skill is always in demand. The continuation school as advocated in this report can furnish this medium for attaining skill, at least to a certain extent. It provides a way by which, if the boy wants to enter a broader and more permanent employment, he is at least given a chance. The door is not shut to him. If he wants to enter a regular apprenticeship at 16, the work he has done has lost him no time. If on the other hand he wishes to change his occupation at 16 and go into another, he has been taught something about some particular trade or occupation for two years. He has, in addition to that, been taught arithmetic, English, and has a general education as his stimulus.

He has not been allowed to drop his habits of study and to lose the discipline which goes with it. He has lost nothing, whatever he wishes to undertake. For instance, the shop mathematics which he will have to learn in the continuation school, if he is engaged in the hardware work, will certainly be of use to him in woodwork or in clerical work, if he wishes to enter either some other employment or a trade school at 16 years of age. Whatever he goes into, the compulsory continuation school between 14 and 16 will certainly help him. He has not lost his time, and he has acquired besides, a general education which cannot fail to be of use to him whatever he does.

But the question comes up, how about the boy who is not in a trade, who does not wish to learn one, or who is in scattered employments in which no special classes can be formed? What about the boy who is in some village or small town which cannot maintain schools for different trades? This shows the elasticity of the plan for continuation schools. General continuation classes can be formed. General training, including citizenship and all the other branches of work particularly adapted to any man's life, can be taken up. When a certain number of boys from a particular trade can be gathered together a special class can be formed, just as is done in Germany. A boy going to these courses can go, as required by the Scotch law and as proposed in this report, to an evening school; or can go, as other boys go, to continuation schools, but he can take general elementary or cultural work instead of industrial work.

Classes for illiterates or for foreigners who wish to have a knowledge of the English language can also be oganized. In fact, any kind of a class which is adapted to the wants of a few people can be formed. Classes can be developed and specialized as the needs arise and as the money is forthcoming. In America, where our classes have not been strictly stratified, there will be a large percentage of our boys who happen to be working in industrial work, who will want to study for professions. With a careful supervision and with permission of some local board, a boy who is meanwhile working temporarily in a dry goods store and who wants to study law, may be excused from the commercial continuation school and go to some evening school. Such a boy should certainly not be hindered but ought to be given every opportunity to go ahead in his particular choice as long as it is a reasonable one.

We have an efficient instrument to fill in the gaps in this scheme, in the university extension division. This is so organized that it can take care of small numbers of especially ambitious boys and men, and carry them along until classes can be formed. There is no machinery in Germany or any other country which can fill in the gaps in this manner. A boy can go as high as he wishes in this work or begin with any branch. It forms an elastic element, and we have this great advantage over any other state in the formation of an industrial educational system.

In order that your committee may not be thought to put too much emphasis upon the industrial field, it must be remembered that it is in office work, mercantile work and the various parts of business training that perhaps the classes in continuation schools can be most easily formed, most cheaply maintained and for which convenient hours can be most easily arranged.

It is evident that a great deal of experimenting will be necessary before these schools can be thoroughly adapted to the work in our state. Nevertheless, we do not want to follow the example of the manual training schools, or for that matter some of the methods used in agricultural education in America. We do not want this instruction so general that it will not effect in a practical manner the work in which the great body of our young people are actually engaged. Our plan must evolve gradually as needs become apparent, and means for meeting them are worked out. Without such elasticity, without a proper safe guard to too rapid development and specialization, fads will creep in and costly waste will be the result. By caution, by adjusting the courses as they come up, to the necessities of the business, by a careful analysis of the various needs of the community, we can hope to develop our educational facilities as those needs increase; we can change as the industries change, and we can establish higher and more complex specialized teaching as the demand arises. The general continuation school will rapidly develop into special classes, but the general classes will no doubt come first because they will reach the greatest number of people. It is apparent that in some trades, such as the carpenter trade, plumbing, and trades of that general nature, special classes can be established at once.

The experience of the teachers of the university extension division and of the teachers in the agricultural short courses, as

well as those in the school for artisans at the university will be of the greatest service in this evolutionary building up of continuation schools.

The continuation school may be only a stop gap, but it is the only device which will, with any degree of efficiency, take care of the children between 14 and 16 years of age. It will solve that question better than any trade school or evening school. The Wisconsin bureau of labor report for 1910 says, "As far as instruction is concerned, it would be possible to admit boys of 14 to the trade school, but at the age of 16 a lad would be too young to go out as a journeyman. Therefore it does not appear that there would be any advantage in admitting boys to trade schools before they are 16. In the trade school preparatory courses, English, practical mathematics, mechanical drawing, shop work, would naturally make up the large part of the curriculum." This is the very work that the continuation school could do. The plan here proposed would meet this situation exactly, as it would provide for this pre-apprentice training thought necessary by the Bureau of labor.

Whether we wish it or not, the children are already at work. As described in this report, the trade school could be at the same time the continuation school, if we follow the method now used in Germany. If it is possible for a boy to go to a preliminary trade school at 14 years of age, another boy at 14 years of age who is employed all the time could be in the same class. He would of course be at work on a different task, as described in our discussion of the "task" system. The details of this task system will be later on described in our report.

The continuation school is in truth an industrial school, if the distinction can be made between an industrial school and trade school. In the trade school as now organized in Massachusetts and as advocated by the American Federation of Labor and by most of the manufacturers in America, children can be admitted without difficulty at 14 for full time, because the first two years take up the very preparatory work advocated by the Bureau of labor. The continuation school as we have outlined it here, will insure a broad industrial training and will insure at the same time that greater numbers of students will take this work because of the compulsory features in our plan.

It would be ideal indeed if we could compel all the children to go to the common school or high school until 16, but in prac-

tice it has not worked out properly. The common school is not the place for any really practical trade education. The common school may teach some fundamentals, and the high school may teach some manual dexterity or tool knowledge, but neither of these schools can supply the equipment, the atmosphere or the teachers to teach the boys who are already in an industry or who must work for a living.

There is a considerable number of children who would not be greatly benefited by going to the ordinary school beyond 14 years of age. Under the present school system, a great many children fret under the kind of instruction which they get in the common schools at that age and naturally resist it. Some children are so constructed that they must learn by seeing, hearing and handling material. They must learn by doing, and neither the common school nor the high school can supply this method. The continuation school can supply it and can give the fundamentals which should accompany the actual acquisition of skill in any work. For those who will go to work or who must go to work, the only solution in sight at present is the compulsory continuation school to 16 years of age.

Again, we assert that in carrying out the system of continuation schools we are only doing for trade, business, and manufacturers what we have already done in agriculture. At least, we are using the same principles. The great success in agricultural education, when it comes right down to the question of turning out farmers or dairymen, we repeat, has been through the short course, or continuation schools for those actually in the industry. The continuation school boy who goes from the factory into the school and from the school back into the factory does not get merely theoretical training, but he adds theoretical and cultural training to the practical tasks which he has to meet in the factory.

This problem is not as hard as it seems at first. A law can be passed which will allow cities of certain classes to establish voluntarily continuation schools of a general or of a special nature, and whenever such schools are provided, then it shall be compulsory for boys and girls between 14 and 16 years of age, who are employed in industry to attend them; or, a law can be passed which will require cities and villages to establish such schools whenever the parents or employers of 25 boys or girls shall make application. But the compulsory law, providing for

compulsory continuation schools and for their equipment can be so drawn as to go into effect in 1913 throughout the state. This will give villages and cities a chance to prepare for such additional school facilities as will be needed; and by that time an administration department to take care of such schools may be established in the state. The problem is not a hard one. Of course your committee does not contemplate the establishment of a compulsory law without having some means provided for taking care of the children; and by the above gradual process it is thought that ample provision can be made by the time set for the compulsory feature of the law to go into effect.

EVENING SCHOOLS

Analysis of existing methods.

The continuation school was taken up first because it is more successful than the evening school. However, the evening school must be considered in connection with continuation schools. It deals with the same class of people and meets the same needs; in fact, the evening school is a continuation school—the kind best known in this country and in England. Your committee has compared the evening schools with the continuation schools in order to get their points of difference and the points of success or lack of success in each of these systems. Your committee does not propose the abandonment of the evening school; the evening school must always exist. It fills its niche in the evolution of industrial education. It has produced in the past brilliant men and women. It has furnished the blessed opportunity for many thousands of toilers to develop themselves. It first appeals to us when we think of extending the opportunities of education to the great mass of those who work. In the discussion of the continuation school it will be seen that the Germans have already found that the old fashioned evening school was the most difficult school to maintain and in the end the least profitable investment of public funds for education. The evening schools in Germany have been largely superseded by the new and more economical methods used now in the day continuation schools. The Germans have not done this without reason. It is the belief of your committee that some of the reasons for this change have been found.

A comparison of the work done in these schools shows at once that in four out of five public evening schools the work is decidedly inferior to the work done in such private evening schools as the Boston Y. M. C. A. and the great Polytechnic school in London. At the public evening schools one often sees rooms full of listless students, and hears the constant complaint of the teachers that "the pupils will not work," and "they drop out towards spring," etc. Teachers will point with pride to some young man, who, through sheer determination and self control, is "working himself up." But, on the whole, it is pretty discouraging when one considers what ought to be done for these boys and girls who are striving so hard to better themselves. This is true not only in America but in England and Germany. Those who have examined this problem thoroughly, all agree that the economic "pace" today makes it very hard indeed for the growing boy or girl to do good work at night school after a hard, long day spent in tending a machine. Our work has changed; the piece work and the rapidity required in work upon machines makes labor nerve-racking and leaves the persons working under modern conditions, exhausted in the evening.

A distinguished German educator told a member of the committee that he believed that the evening school would soon be a thing of the past everywhere. "It is merely a question of economics. Boys and girls between fourteen and twenty years of age should be allowed to develop physically; that is the first concern of the state. You can't do anything unless you have the foundation of health and strength upon which to work. Our division of labor, our factory system, our piece work, our pace, are devitalizing influences notwithstanding all governments have done to bring about child labor laws and sanitary conditions in industries." Mr. and Mrs. Sidney Webb, the great English economists, in their famous "minority" report upon the poor law in England, hold practically the same views, and warn the English people that evening schools will not serve the purpose unless time is given off from the work in the day time.

The Germans, after the most thorough and painstaking experiments reaching over a number of years, are now discouraging the formation of evening schools for young people under

20 years of age. Every effort is made to bring the work of industrial education into the day time. Experience has taught them that this work is not good when pursued in the evening. It would be blindness and folly indeed, for your committee to recommend the investment of money in the state of Wisconsin in evening schools, unless we profit by some of the experience of other countries and other states; unless successful methods which are used in other states are considered. We have not yet organized our system of trade schools or continuation schools, therefore we must do something to fill the gap, and it will be necessary, your committee believes, to establish evening schools for a while in this state, but only under protest, with the idea of eventually abolishing them for children as the Germans have done.

The testimony seems unanimous upon this question not only in England but in America. John L. Shearer, president of the great Ohio mechanics institute at Cincinnati, which has done as good work as any evening school in this country, says: "For moral reasons I cannot sanction the establishment of departments in our public schools which make it optional for a child to attend either in the day time or in the evening. The temptation becomes too great to utilize the child's ability for commercial purposes and the consequences of this irregular training becomes a serious burden upon the public in later years. I have not found that evening classes for children are productive of good results, but rather leave in their train many serious evils. This brings me then to what I consider the legitimate sphere of the night school. It should be a good school for adults and not for children."

The report of the Society for the Promotion of Engineering Education gives us practically the same opinion. The report for 1900 states: "The student comes two or three evenings a week from seven or eight to ten o'clock. He comes more or less worn out by his day's toil and he reaches home long after his usual retiring hour, practically exhausted. His mind cannot be alert with his body in a fagged out condition, and hence this class of instruction is at once a great hardship, and in comparison with day schools it is of relatively little profit. Men who are engaged in any kind of actual manual labor through the day are greatly handicapped in their attendance upon such schools. They are most valuable for clerks, bookkeepers,

draughtsmen and the like. They can never become a substantial element in the technical education of the industrial classes."

Every authority in America and Germany agrees that children should not be put into the night school and nearly every authority agrees that the night school is not of the highest service to adults. It may be that the reason for the fact that so little interest is taken in the public night school is because of the unattractiveness of the school compared with the great amount of amusement which surrounds him in the evening in every walk of life at the present time. The very pace itself seems to breed a desire for excitement or amusement. As Jane Addams and others have pointed out so often, this is a perfectly normal thing, and if the school does not give it, some other, perhaps less worthy, institution will. The English have recognized this and have tried unsuccessfully to overcome some of the shortcomings and lack of interest in the evening school by brightening up intellects through healthy amusements in connection with those centers. However, the ordinary evening school which has none of these things certainly takes too much vitality from a student. It seems impossible for the strongest adult, let alone a child under 20 years of age, to go a long distance to some evening school, to meet there again, repression, tired teachers and listless companions. Everything in the boy or girl, or for that matter the young man and woman, cries out for life or amusement, sympathy or companionship. The electric lighted streets, the dance halls, call to them. It takes great will power indeed, or else stupid acquiescence to keep up such a routine. It comes to be merely mechanical attendance without effort.

Why is it that boys will go to the evening schools conducted by societies or endowed institutions and gladly pay a high fee for such instruction, when the public schools, sometimes with expensive equipment and nearly always without fees, give exactly the same work? As has been suggested before, if there is success at all in evening school work, it is in these private schools. After watching the work of the teachers in the private school, again the truth of the saying of the great French economist, Leon Say, comes home to us, "It is not merely the machine, it is also the machinist."

It is a crying shame—it is a crime, that Wisconsin has scarcely any evening schools whatsoever of any class, but after all it is in line with the neglect of all the rest of the country and with the lack of adjustment and the stupid methods pursued everywhere. The evening schools—the only schools which we have had in America for the working boy and girl—are taught generally by tired teachers; the same teachers who teach in the day schools, and who wish to make a little money by teaching in the evening schools. Many teachers also come from the ranks of college students or from those who, through illness or misfortune, are unable to teach in the day schools. These, with a few enthusiasts, who are giving their time and strength to uplift—these are the teachers, of those who are to be the bone and sinew of our people. These are the teachers who must teach our industrial classes the things which prepare them to meet the battle of life.

The man or woman who works all day teaching children and comes tired at night to teach tired students is at best but a second rate investment for our educational system, however noble the efforts of such a teacher may be. The Y. M. C. A. and private institutions have professional teachers for this kind of work. They make a study of it. They have the enthusiasm and freshness of the expert; they understand that something must be done to interest the student upon the social side as well as on the educational side. Usually they have day classes as well as evening classes, as in the Polytechnic school of London, but always arrangements are made so that the teachers come fresh to their work. Adjustment of time is made so that teachers maintain their vitality and their interest. This is true also of the best German industrial schools. Wherever the Germans have evening schools they are very careful indeed to have these taught by fresh teachers, who understand the right methods of evening school teaching. This arrangement can easily be instituted where trade schools or evening schools already exist.

The second point of success which the professional evening school teacher has over the regular day school teacher who works in an evening school is in the method of teaching. Nearly all these schools are industrial in some sense. They are industrial in their nature because the young of the industrial classes need

them; they are industrial because the greatest interest can be kept up by industrial teaching. The workman learns through doing, something which had a connection with his everyday work. Consequently to meet these demands a complete revolution of method is necessary. It is essentially different from that used in teaching pupils in common schools, in high schools or colleges. The "teaching by doing" method so common in all industrial education in Germany as well as in successful industrial education in America, is the only one which can be used with any degree of success in our evening schools in Wisconsin. The teacher who has been teaching all her life in public schools, does not realize and cannot realize that she has to change all her methods to become a successful teacher of boys and girls who are working in shops and behind counters all day. The private schools do not merely teach mathematics; they teach shop mathematics. The pupil in the ordinary public school begins to learn arithmetic in a lower grade. After certain lessons are given and a certain time spent, the pupil goes to the next grade and so on up to college. It is the same with every study. At no point until a man enters a profession, is there a gathering of all these different studies to work out practical every day problems, which confront the individual in dealing with his work. This method cannot be applied to the teaching of workers, as there is either no fixed objective point to be reached or it is so far away that the workman loses it. The whole vital difference in the success in the methods of teaching, is here. The successful evening school method is that one, which recognizes the objective point to be reached. If, then, the teacher in the evening, teaches the boy certain mathematics, and the next year he comes and learns more mathematics in the same manner as does the boy in the grade, he will not be interested and will not go to school. He gets the idea that he will be an old man before he gets what he wants. But if at once he is given something which helps him with his daily problem, then his incentives are aroused and he is encouraged and becomes at once interested in his classes.

The splendid drill in principles which children receive in the common schools may be all right, but these methods will not do for evening schools. The pupil in the evening school must understand the purpose of it all, must see how everything will give him immediate help upon the problems confronting him.

Nine out of ten times his inability to solve these problems keeps him from earning more money. As the director of the New York department of industrial education says: "The teaching of application of theory should always be emphasized in evening instruction."

In the Boston Y. M. C. A. for instance, one sees chemistry applied directly to a shop problem. Problems are worked out with the instruments used in every day trade for wiring electricty and for measuring it. Automobiles are repaired and the principles of physics and mechanics are applied directly to their repair. So in Germany the boy works with the object of his trade before him. For instance, at the jewelry continuation classes, the boys draw by free hand the designs used in the jewelry made in the factories. Arithmetic is based upon the calculations actually used in the trade or industry. In the class in mechanical drawing, the lessons relate to every day work upon the machines or buildings. Great stress is now being laid upon free hand and mechanical drawing. The aim sought, of course, is to inspire idealism in the mind of the workman—to awaken his artistic sense and at the same time to make him understand thoroughly his work and to train his hand and mind together. The best models from all over the world are sought, with such thorough understanding of the nature of the problems which the student meets, that practical results are obtained.

Incentives should be studied and used.—President Elliott of Harvard shows that the desire to gain competence from a profession is a great incentive. Why not apply this motive to evening schools?

"Multitudes of American children, taking no interest in their school work, or seeing no connection between their studies and the means of later earning a good livelihood, drop out of school far too early of their own accord, or at least offer no effective resistance to the desire of unwise parents that they stop study and go to work. Moreover, from lack of interest, they acquire while in school a listless way of working.

Again, interest in their studies is not universal among that small proportion of American children who go into a secondary school; and in every college a perceptible proportion of the students exhibit a languid interest, or no interest, in their studies, and therefore bring little to pass during the very precious years of college life.

There are, however, certain regions in the total field of American education in which the internal motive of interest in the work comes into full play, with the most admirable results. In general, professional students in the United States exhibit keen interest in their studies, work hard, advance rapidly and avail themselves of their opportunities to gain knowledge and skill to the utmost limit of their strength and capacity, no matter whether the profession for which they are preparing is divinity, law, medicine, architecture, engineering, forestry, teaching, business or corporation service.

In secondary education the high schools of commerce and mechanic arts have a decided advantage as regards motive power within the pupil, over the ordinary high schools. The industrial schools, trade schools, continuation schools, evening and summer schools, business colleges and Y. M. C. A. classes in secular subjects show a large proportion of strongly interested pupils.

We ought not to be surprised that schools which avail themselves of this strong motive get the best work from their pupils, and therefore do the best work for the community. All of us adults do our best work in the world under the impulsion of the life-career motive. Indeed, the hope and purpose of improving quality, or quantity, or both in our daily work, with the incidental improvement of the livelihood, form the strongest inducements we adults have for study, productive labor; and the results of labors so motived are not necessarily mercenary, or in any way unworthy of an intelligent and humane person.

There is nothing low or mean about these motives, and they lead on the people who are swayed by them to greater serviceableness and greater happiness—to greater serviceableness, because the power and scope of individual productiveness is thereby increased—to greater happiness, because achievement will become more frequent and more considerable, and to old and young alike happiness in work comes through achievement."

Practically no attempts have been made to work out the incentives which lead students to study outside of hours. If these incentives are not examined, a great deal is lost in method. If in teaching illiterates or foreigners who wish to gain a few hun-

dred words of the English language, we begin in a round-about way such as we would use in teaching grammar to children, then these foreigners will not go to the evening schools. If we set them upon tasks which have nothing to do with the work in hand, it will be increasingly hard for them to become interested in this work. Says William P. Dooley in a report of the Massachusetts labor bureau: "Every worker attends evening school to satisfy a definite need; hence the evening school instruction must appeal at once. The teachers must offer an incentive during the first lesson in order to hold the student, and that first lesson should be the most interesting one, presenting the practical part so that the student will leave the class having gained some information about his daily work. For example, a young machinist who has received a reprimand from his foreman or his overseer because he cannot read a working drawing with sufficient skill to do properly his daily work, enrolls in a drafting class to meet that deficiency and finds that the first two lessons are concerned with lettering plates; the next three with drawing straight and curved lines, and the handling of instruments, and that the remainder of the term is to be spent on the projection of points, lines, surfaces and solids. During this time he is receiving in his daily work the same reprimands and is therefore debating in his own mind the value of the evening instruction. The average machinist does not see the direct application of this instruction to his work. He enrolled for a definite purpose. To be sure it was a narrow one, but it had economic value to him. It would have been possible to give in the first evening some elementary instruction in the reading of simple drawings and teach him in 5 lessons where to look for the dimensions denoting length, breadth and thickness; to have shown the principles of simple drawings and to have him comprehend the laying out of holes for drilling. Instead of leaving school at the end of five lessons with no instruction which appealed to him, he would have remained in the drafting room to receive the more definite and thorough instruction in the theory of mechanical drawing such as must be gained if one is fully to comprehend and cover the entire subject. Courses in the evening school for workers must be elective and adaptable to varying needs. The course of study should specify not merely arithmetic, geometry, chemistry, etc., but should read arithmetic for textile workers, arithmetic for machinists, arithmetic for firemen and engineers,

arithmetic for clerks, chemistry for textile workers, etc. This presentation will serve not only to catch the eye but will offer an incentive."

With the greatest care in the choice of methods and the greatest enthusiasm upon the part of the teacher, the percentage of attendance at the best evening school tends to be very irregular and a large attendance extends over a very few months. Many methods have been used to counteract this irregularity, such as that of charging a fee and refunding it after the year is over, and also by the installation of all sorts of social attractions. England has perhaps done the most of this kind of work. This whole question of evening schools in relation to children under 16 years of age, brings out again the necessity of the enactment of a law modeled upon the Scotch law, as recommended by your committee. If it becomes necessary to have evening classes for such children in the state of Wisconsin, your committee believes that these classes will fall off unless some sort of provision similar to that in Scotland is kept up and strictly enforced. But in our recommendations leading to compulsion, we must not neglect those other incentives which are so necessary as aids to compulsion. If we have the right kind of teachers and if we use methods which experience has shown us to be wise, then compulsion will be effectively aided. Otherwise we only repeat the dreary history of the past. Groups of students can be formed according to ages and occupations and the whole study of groups and occupations should precede state aid to evening schools on a large scale. For instance, it is found nearly everywhere that the older men object to being in the same classes with young boys. They feel ashamed of it, and the Y. M. C. A. and private schools in general make it a point never to have mixed classes of this kind.

The difficulty in securing the right kind of teachers will be a serious one. It will be impossible to use the average school teacher because he has no other method to pursue and will learn no other than that which he follows in the day time. Perhaps also we must not follow the professional Y. M. C. A. teacher too closely. He is too much inclined to do away with everything that interferes with ultimate success in earning capacity. Yet he meets the difficulty of attendance by stimulating desire, ambition, curiosity, ingenuity. He gets at the interests of the student and strives to keep it. No public school

can compete successfully with a private school unless it uses these methods, and the public school cannot use these methods unless it gets teachers who can use them, and in order to obtain teachers we must train them professionally. The methods of the Y. M. C. A. evening school teacher are all right if they meet the broad ends of education. They can be supplemented by broader teaching in a few scholastic or so-called cultural subjects. The teachers from a day continuation school, such as proposed in this plan, would be the nearest thing to the successful teachers of private schools. Arrangements could be made, so that by shifting teachers, some could work in the evening and others in the day.

If we should copy the Scotch law, and furnish state aid for centers for continuation schools and form evening classes upon the basis advocated in this report, we may be as successful with boys and girls and with adults, as the limits of the evening school work allow. Eventually, however, we should raise the age limit provided by the Scotch law to 18 years of age. The boys who would come to the evening school would be brighter and fresher and the result would be a better investment for the state.

Consider again for a moment, some of the social activities which private institutions have provided in connection with the evening school, and it will be understood of what aid these attractions may be made in bringing young people together for serious study and uplift, and what a force against evil can be encouraged by talking over some of these attractions with the aid of public funds. As a counteracting force to the outside amusements and as a stimulus to the jaded mind, lectures, entertainments, music, gymnasiums, athletic teams, bowling, all have been used in private evening schools with success. Besides these private evening schools often are employment agencies and do a great deal in giving advice and vocational direction. Now these are all good advertisements and useful in inducing people to attend these schools. But it is equally true, that in many cases they may become serious distractions and are not conducive to hard, thorough study. This has been found true unless they are undertaken with moderation and keeping the chief end in view—that of higher education for the working man. Nevertheless some of these things are of the greatest educational value. The debating and lecture divi-

sions of the University extension division could be used to supplement the regular work of the evening school and could have a regular place in the credit for work completed. Not the least among such activities would be lectures in patriotism and classes in citizenship, such as are carried on by the Peoples' institute of New York, and the Civic service house of Boston. The latter has had for some time a vocational direction bureau for young men about to enter the industrial life.

Evening schools in England.—Considering what we have just said about the deficiencies of the evening school in this country, a striking parallel and a striking confirmation of our investigation is the result of our study of evening school education in England. Without compulsion or without the benefits of time off during the day, except that which occasionally employers give, the results are shown by the following descriptions of conditions in England. Charles Winslow of the Massachusetts commission, who made an investigation of these schools in England quotes an important member of the Liverpool Trades Council as follows: "We have practically no free technical education unless a boy secures a scholarship, and those are limited, as the competition for them proves. We ask the boys to make sacrifices and improve themselves by attending evening classes. That means that the lad has frequently to get up at 4:30 o'clock and go to work; he quits work at 5 o'clock in the evening, swallows a mouthful of food and rushes to his classes. We require him to do that three nights a week. I am an advocate of evening schools only because I can get nothing better. What I should like to see in Liverpool is instruction being given in the master's time and not in the boy's time. I am afraid that under the commercial system of to-day instead of making artisians we shall be making automatic machines merely, that will be the curse of the future. Therein arises the necessity for technical schools. No one, I venture to assert, can gainsay the importance and excellence of the work of these evening schools; and yet the general public is comparatively indifferent to that work. Between 8000 and 9000 students only have entered these classes during the past session, and in proportion to our population in comparison with other cities, it is estimated that at the very least the evening schools of Liverpool should have 15,000 pupils in them." Shadwell, in

speaking about industrial education in England says: "With the universities, the national physical laboratory and the coming imperial college at Kensington, it is not schools that we lack, but scholars." In comparing the schools of Germany and England, he says: "When comparisons are made between the number of students of engineering in science schools here and in Germany or elsewhere, it is putting the boot on the wrong leg to call for more schools. The real difference lies in the lack of scholars."

What we have said previously about the failure of evening schools is driven home to us by the remarks of these Englishmen. Industrial education in England is largely a failure because the Englishman is trying to do the impossible and will not learn new methods, and does not see that the evening school is not the best form of education. To a large degree also he does not understand the methods which have been worked out in Germany and the best schools in America. The wisdom of the "teaching by doing" method has been appreciated only in a few places. The testimony in the report to the Massachusetts commission on industrial education says: "A prominent industrial educator remarked that he had visited Germany to study the educational methods of that country and had come to the conclusion that the English system of education concerned itself more with reading from that point of view of literary exercise than with the object of providing for requirements needed in a business. Also that arithmetic was regarded as a sort of mental gymnastics instead of means of solving problems to be met with in the offices or workshops. As a rule, arithmetic often proved a useful agent in the training for a commercial career, but was not as useful to a student if he entered the workshop."

All testimony shows that it is by the hardest, most persistent effort that any great number can be brought into the evening schools; that the attendance is very low comparatively and the work is not of a very high order, except in Manchester and where the manufacturers have given a certain amount of time off in the day. Without any great degree of success, almost every device has been exhausted in order to put life into the evening schools and to get first class results. Says the bulletin on continuation schools in the United States, speaking of English methods: "Various methods have been tried to secure

more regular attendance but have met with little or no success. Returning the whole or part of the fee, annual outings or social evenings during the session, lantern entertainments and concerts, making the school absolutely free, are experiments which have only been successful in isolated instances. The lack of any real liking for study, of any desire to learn on the part of the students, and counter-attractions have proved too strong."

As a result of the investigation and research which this committee has done, and from the experience in other countries, we find, first, that the evening school is not as good as the continuation school; second, that we shall probably have to use the evening school in future until our system is well started, but that we should not encourage it without careful supervision of the methods and the teachers who teach in such schools. We should do everything in our power to bring about the hearty co-operation of manufacturers and employers in the matter of granting time off during the day time in order that the boys and girls may be fresh for the evening. We also recommend that all illiterates under 21 years of age be compelled to go to evening school wherever they are established. Evening schools can be established by petition as in Massachusetts. If 25 persons petition for an evening school, it should be started. As far as possible, evening school work should be supplemented by lectures, debates, etc.

TRADE SCHOOLS

Difficulties relating to the third factor in the order of progression is the trade school. In most cases this has been the starting point in America. It is easier to put up a building in some city than it is to work out a combined system for the whole city or for the whole state. The costly building and equipment, and the many questions of adaptability and methods make the trade school problem the most serious one of all and the hardest plan to carry out properly. In the case of the trade school, we come at once to the discussion as to whether trade schools should be encouraged in America, or whether high schools should take over the trade school work. There are those who believe that trade schools should not be established and that the high school ought to do industrial work of this kind. We know, however, from our

statistics that a large majority of boys and girls will never go to high school, and for this majority something must be done.

The committee on industrial and technical education of the National council of education July 1, 1910, says: "From the evidence which the committee has obtained, clearly boys who enter mechanical trades almost without exception leave the public schools before graduating from the grammar school, and it should be recognized therefore that the beginnings of trade education if such education is to articulate with our present school system, must be had in schools that draw their pupils largely if not entirely from the class of pupils who have not graduated from the elementary schools. Such schools,—intermediate, industrial or preparatory trade schools—cannot be really paralleled with the existing high school. In order to prevent possible misunderstanding by the pupils of the public school, the intermediate industrial school should be freely recognized as independent in its requirements for admission and its courses for study. Its courses of instruction must be short. This is essential if some schools are to come within the economic possibilities of boys and girls who will follow manufacturing trades." This brings up the question: What specific subjects shall be taught? What is a trade? What is industrial education? What is skill? How can we give such training and yet not deprive the boy of the American privilege of cutting out the future for himself?

The establishment of a trade school means one thing in one industry; it means another thing in another industry. The merest investigation of American industrial conditions will show at once, that the leaders of today in our great industrial enterprises have often come from the ranks of manual skill into the ranks of managerial skill. If that is so, are we to teach merely mechanical things? If we do not teach more, how broad will our education be to fit into the entire life of the people? How much individual efficiency, or how much group efficiency must be taught? These are questions which have never been thoroughly investigated in America. To some the learning of a trade means the learning of a few mechanical processes. To others it means a thorough grounding in fundamentals.

Again in some trades boys cannot begin at 14 years of age. Apprentices are not taken on in trades such as those of locomotive engineers, or firemen, or stationary engineers. Most of these are trades where the apprentices really do not begin to learn the

trade until they are 17 or 18 years of age. They are not physically strong enough. What kind of an intermediate school must we provide for such people? The trade school problem, then, is a far more difficult one than that of the continuation school. The public cannot afford to put all of its money into a costly building to educate 50 to 100 boys in a community, where the same money spread over a large territory will educate in some degree thousands of boys. This committee has sought to find some way of combining trade schools and continuation schools, evening classes and extension work into one unified and economical system. Fortunately a trade school can be so built and conducted that, by combining it with the other factors of industrial education just mentioned, that its efficiency will be doubled and its economic cost brought to a minimum. It can be so combined, in fact, that it will be adapted to the needs of all industries and will fill in the gap in our industrial life in which manual training fails.

What are the problems of the trade school which manual training in the high school cannot solve? Summing up in a rough way the statement from the National council of education report of July 1, 1910, it is evident that the methods which we described in discussion of the evening school can be applied in the trade school much better than in the high school. It is evident that the high school will be more or less dominated, even if trade education is brought within its walls, by an effort to direct that trade education toward engineering and the higher kinds of technical work. The trade school then is necessary in order to get the point of view, to get the right atmosphere, the right means of working, the right attitude of mind. It is necessary in order that the standards may be correlated and made to meet the particular needs of the particular individual in direct relation to his life work.

Your committee, after examination, believed that the establishment of separate trade schools should be strongly encouraged in every city of the first, second and third class in this state. However, a careful industrial survey is absolutely necessary before any such costly equipment should be placed. Trade schools should be established as the needs arise, and by the co-operation of the community and the state in a manner similar to the Massachusetts plan.

A recent article in the Survey on "How Girls Learn the Mil-

linery Trade," shows us the need of caution and of a careful survey. "Should there be schools for training girls for special trades? If so, at what age is it desirable that girls should receive this trade training? Of what type should these schools be? For example, if they are for girls between 14 and 16 years of age, should they be day schools with general and special trade training, or day schools limited to special training, or day schools with part time work in trade? If for girls over 16, should they be special technical, or trade day schools, or should they be evening or day continuation trade schools for workers already in trades? How high a standard should they demand for their teaching force? How exacting should be the requirements for entrance and for the continued attendance of pupils? How discover a girl's aptitude for a special task? How supply the demands for an industry which wants many workers who can do one thing well? How train these workers so that they can do that one thing and yet be efficient workers in the broad social sense? How should they test their pupils' work and their own methods?

It is apparent that, if we answer all these questions before we attempt to establish a trade school we will not waste public funds, and it is apparent that such questions cannot be answered unless some expert advice and some investigation can be given in each particular case, for the trade school requirements in one place and in one occupation will be absolutely different from those in other situations. They cannot be standardized. It is for this reason that your committee favors a gradual evolution from the continuation school through the trade school as the surest means of getting the greatest economy in industrial education.

This does not mean, however, that the trade schools and continuation schools should not be established in a small way at the same time in certain places which are of sufficient size and contain enough workers for such demands. The building trades, metal trades and shoe and leather works in Milwaukee are all of sufficient importance to justify trade schools. Many other cities in the state have industries which we know at once would be benefited by the trade school, and the schools could be made centers for all other work by means of the task system as described previously.

Your committee, in discussing trade schools does not use the term narrowly. It means to the committee a vocational school,

industrial or commercial. These schools will have to be established sooner or later in this country and in our state. The great lack of efficient help of a certain grade and the disorganized state of the apprentice system to-day will compel their establishment. However, how far they will go, what work they will do, and how they will be combined with our other educational work, are as yet unsolved questions.

Two different opinions seem to exist in the world today as to the future of a trade school. As we have previously said, the trade school is not the basal unit of German industrial education. That basis is the continuation school. Dr. Kerchensteiner of Munich says that the tendency of the future will be that industrial education will be given in the school and not in the factory. He holds that the school can give a broad basis for the future, and that a shop cannot produce a good mechanic; that the variety and prospective, scope and range required for sound industrial education, cannot be given in a factory today. He holds that most of the factories are unable to give any broad educational basis to their students.

On the other hand, some of the leading authorities today assert that the trade school alone never can produce the workers who are fitted to meet industrial wants. They point out that in the trade school the pupil does not work under actual trade conditions, that he is often wasteful and extravagant in material and spends too long a time at each task. He does not learn any of the economies which the pressure of shop conditions makes necessary. The criticisms of the men actually in the industry are worthy of attention, and no doubt they have facts on which to base what they say.

In the article before mentioned on "How Girls Learn the Millinery Trade," attention was called to an investigation made in New York showing the results of some of the best trade schools for girls in America. After interviewing 200 of the employers, the investigators found that one-half of those investigated had formed positive opinions about trade school teaching. "Only three expressed unqualified approval; nearly one-fourth were indifferent; more than one-half disapproved. 'They don't do our kind of work;' 'It is desirable but it has its limits;' 'They don't know how to do any one thing well;' 'They don't know how;' 'Schools don't keep up with the styles;' 'The girls are not quick enough;' 'The schools are not good be-

cause they are not business-like;' 'We have no use for trade school girls; they have no ideas of their own;' 'Undesirable;' 'Measures and charts are not used in workrooms;' 'They learn how to make only one hat;' 'The schools are no good but they ought to be.' " Manufacturers in all kinds of industries who have been interviewed, on the whole, approve of trade schools, but most of them have some complaint and all are striving to discover wherein lie the deficiencies. It is therefore with the greatest caution that we should advocate trade schools in our state. Investigation must be thorough, a keen analysis must be made and the latest up-to-date elements of success must be studied. It is the easiest thing in the world to dogmatize about a trade school; but from the investigation which your committee has made, it is evident that trade schools will be as varied as are the trades, and that there will be no set pattern to which all can conform. There is no doubt that in some trades the apprentice system combined with continuation schools and the various other methods which will be described later, will serve the purpose, but there are other cases in which no such arrangement can be made.

A workman today has to steal his trade in a great many industries, and in so doing he has created trade schools. Trade schools exist today in great numbers and at great cost. In fact, every factory is a trade school. A boy steals his trade, and by doing so makes the manufacturer pay for it. He gets a position by misrepresentation and then proceeds to try a machine and of course spoils and wastes until found out. When he is discharged he proceeds to do the same thing again in some other place, until finally he becomes a fair workman on his machine in some subdivision of a trade. But at what cost to the manufacturer, to industry, and to the public, and finally, at what cost to organized labor!

In an article in one of the bulletins of the National society for the promotion of industrial education a factory superintendent says: "Very few of us have kept an account of the cost of the trade schools which we are maintaining in our respective factories. Of the actual outlay for wages never earned, for the actual loss and merchandise damaged while learning, and the cost of superintendence." Again, the report of the Industrial education commission of Massachusetts says: "The net results of this inability to raise up skilled workmen is that our factories

are becoming filled with unskilled ignorant laymen and our present trouble is to find enough men to direct intelligently their efforts. In some lines where our foreman formerly controlled 25 or 30 workmen, he can now direct the efforts of only 6 or 8 of these machine operators." In the bulletin of the National society for industrial education we read again: "The manufacturer is additionally handicapped because very few operators are skilled enough to take proper care of their own machines. A superintendent says: 'in the factory where I am foreman that not a day passes but what some operator has to have assistance in keeping his machine in good running order.' There are plenty of operators who do not know enough about their machines to lace a belt or put it on after it is laced. Anyone who has had experience in runing a shop knows to his sorrow his personal inability to hire proper help on all parts of the work."

Attitude of organized labor.—The labor organizations are not opposing trade schools. They realize now the cost of such inefficient labor to them, as well as to the manufacturers. A union is secure if its men are skilled. Unskilled labor cannot form a successful union. The higher the skill the greater the pay, and the security, and the higher the standard of life. It is obviously to the interest not only of both capital and labor but of the public as well, that efficient industrial instruction be given through the trade school or some modification of it.

Organized labor will not oppose trade schools in which carpenters, plumbers, brick-layers or others who must learn a complete trade thoroughly, are taught; that is, if courses occupying a certain length of time and requiring a certain degree of thoroughness are assured before the boy goes out to work. What organized labor is afraid of, is the reckless and indiscriminate establishment of so-called trade schools which only intensify the problem of the unskilled man.

The difficulty in shoemaking is, at once, apparent. This is a trade which includes from 60 to 100 different processes. It is easy for a man to pick up a part of one of these processes in a couple of months and if trade schools would form for that single process there is no doubt that they would soon overcrowd the ranks of partially skilled and inefficient work-

men, and not lead to that high basis of industrial education which is sought by all thinkers and students of the subject.

Again, the necessity for research and investigation before a trade school is established in any particular trade is apparent, when we consider the following complexities. The broad-minded manufacturer wants men who can fit into all the grades between the unskilled laborer and the engineers and architects at the top. The narrow-minded manufacturer will be glad to get all kinds of partially skilled labor. There is no doubt that there is some justification for this. He is often hard put to it to get a man who can run a machine, let alone an expert who knows all about a machine, or a group of machines.

There are certain conditions in certain kinds of factories which require nothing but speed in attending to machines. This kind of speed or so-called "skill" cannot be worked up in the trade school nor should a trade school exist for forming a medium for certain employees to acquire speed. Public funds should not be invested to bring about such results. The manufacturer wishes to turn out workmen. But what are workmen? There is a great misunderstanding between the manufacturers and the union upon this question. There is no doubt that the best of the union men and the best of the manufacturers are seeking the same purpose: they are seeking skill and responsibility and initiative; they are seeking a higher order of man than is now turned out by our industrial system. There is nothing inconsistent in the recommendations of the American Federation of Labor at Toronto and the following quotation from the recent report in July, 1910, of the Committee on industrial education of the American Manufacturers' association. Says Mr. Anthony Ittner in that report: "We propose to make the boy a skilled workman, superior to his father in efficiency and shop experience. We propose also to give him, during the time he is learning a trade, more and better schooling than his father was able to get, and consequently the boy can go directly from the trade school to a good wage-earning position in any shop simply upon his own merit."

The manufacturer really needs and knows it is for his best interest to get this kind of a workman. A few years ago he could import this kind of workman from Europe, but the

conditions there have become so good that such workmen do not come to this country as formerly, although the statistics show that in certain highly skilled trades in America the workmen are still nearly all of foreign birth and training.

It is obvious that in order to have no misunderstanding between labor and capital in this state, with the help of some sort of expert commission, as recommended in this report, agreements should be reached before a trade school is started in any particular trade. For instance, if it is desired to run out skilled workers, and the question comes up as to what are skilled workers, it should be determined at once with the highest good of the trade and of the public in view. In the article referred to above, upon "How Girls Learn the Millinery Trade," we find the following quotation: "All employers want skilled workers. The Fifth avenue employer who wants a girl to copy an imported hat wants a skilled worker; the Broadway firm which advertises for a copyist on ready-to-wear hats wants a skilled worker; the retail milliner who wants to hire frame workers wants skilled workers; the manufacturing house that needs 25 wire frame makers wants skilled workers. Few girls possess all these kinds of skill. Few firms agree upon their definitions of a skilled worker. The girl at the end of a few years in millinery is willing to agree with the employer who said that the 'millinery trade is about 25 different trades.'" Exactly the same kind of thing can be said about the boot and shoe work and about a great many other trades. It is evident that a good deal of this so-called skilled work is not what the trade school should or can teach, but it will be agreed to at once that the trade school should teach men responsibility, should teach men so that they can advance, become captains of machines, become foremen. There is no real disagreement upon that point in any trade, either among the thinkers like John Mitchell on the side of labor or Mr. Ittner upon the side of capital. We must teach these things in a broad way in our trade school, or else the taxpayers will not get the return for their investment in the end, and the state will not get the benefit of the existence of a great body of happy, contented workmen with a true, high standard of life. We must, in some cases, teach correlation between parts of trades. We must teach "ability to comprehend complex relations, to correlate without friction and without waste, the factors of industry; to

make an industrial organization a smoothly working machine." The brassmakers of Birmingham recently sent a delegate to Germany to examine conditions there. They say: "We have frequently been asked, 'Wherein lies the cause of the better social conditions of the Berlin brassworker?' The answer is summed up in the words: 'duty, responsibility, discipline, work, order and method.' These qualities are much in evidence among the officials and employers of labor, and the workpeople." Your committee believes that the product of our trade schools should be up to the standard. But we must do more We must give vision and perspective to our men; we must keep up the spirit of Americanism of the past. We cannot teach this by teaching some kind of skill or dexterity in running one machine; we must give industrial training and also encourage, inspire and swing the doors wide for equality of industrial opportunity in the future. If a situation arises like the above, it is not the schoolman who can settle it. It must be settled in the first instance at least by agreement between capital and labor.

We teach the elements of managerial skill while we are teaching manual dexterity. We read the following from the report of the committee of the Society for the promotion of engineering education: "It must not be forgotten that many of our most ingenius and capable machinists and mechanical inventors, who have become the proprietors of the finest machine tool works in the world, have had no special technical education, but have come up through the old system of apprenticeship." Whatever other countries have done, this spirit of progress from the lowest to the highest, this encouragement of ambition, which has made America lead in the past, should be kept, and the trade schools should keep it. To accomplish its true aim the trade schools should be the means of inspiring men to try to climb the ladder. The union man and the manufacturer are in sympathy with this point of view and can be trusted to preserve this spirit.

The union men with good right can insist that these elements be taught in the trade school whenever such schools are established. The union does not want industrial training similar to manual training as it exists in the high school, and does not want skill which will merely overcrowd a trade and not teach the fundamentals of it; it wants this inspiration element,

this helpful broadening and, at the same time, an education which will allow the man to earn his own living as soon as possible. How dangerous a trade school may become to the workingman and to the highest needs, after all, of our entire industrial system, is shown by statistics given in the article above quoted on "How Girls Learn the Millinery Trade," from the Survey of April 16, 1910. In a footnote we find the following: "A statement in the Millinery Trade Review, the official journal of the trade after quoting census figures showing that in 1890 there was one milliner to 323 women 15 years of age and over, and in 1900, 1 in 285, adds if the manual training school and technical institutions continue to turn out milliners in the next ten years as they have in the last decade, there will be one milliner to every 100 women in the not far distant future." All will agree that the union man has a right to be protected against this sort of trade education which produces crowding into unskilled trades without furnishing any basis for an honorable living for the future.

The unions "realize that their power and safety comes from having the gap between skilled and unskilled labor just as wide as possible, and any agency that will help to widen that gap by making skilled labor more effective and efficient, they will welcome. They will oppose any school that seeks to turn out large numbers of half trained men who will tend to lower their standard of average ability and capacity. The good judgment of the American workman will make him see in the school, that helps to lift and uphold the standard of his trade, the most potent ally that has been offered him." (Editor of the Shoe Technical Journal).

The unions will favor public trade education rather than private trade education and there are certain principles upon which this preference is based. First, the union wants to do away with the necessity of a man stealing his trade. In this, it will at once be seen that the manufacturer and the workman agree. Both are united upon this question of providing means for a man to learn a trade in an honorable way. Secondly, the union man favors public education because he thinks he should not be compelled to learn a trade through some kind of favoritism. He will oppose any trade education or any system of it, which may involve even the possibility or shadow of

favoritism. It is this which makes the union very cautious about going into part time schemes.

In England very little attention is paid to the education of men who are not already in the trade. The labor union leaders there all express the opinion that the emphasis should be laid upon the education of men who are already in some kind of work. They are opposed to the training of green labor, as a general policy. Of course the continuation schools recommended in this report would provide for this kind of work and the evening school would also provide for it to a certain extent. But our American labor union people take a broader stand. They do not want to see their sons excluded from learning a trade, if they wish to do so, and want some sort of a public way of giving them the opportunity. As it is now in certain industries, notably in the shoe center, Brockton, Mass., (which is highly unionized) there is no way of learning a trade in the city, and there is no public school for that purpose. The union labor man sees himself in a peculiar position. A man has no chance to send his boy where he can get the vocational training which he desires. If he goes into a factory, he must take the chance of stealing a trade. However, the demand for labor is satisfied by men who have learned the trade or some part of it in some small manufacturing establishment in another part of the country. After a man has learned some part of the trade he will then go to Brockton and the union must sooner or later admit him because he is a serious menace if allowed to float around. In this way the son of the union labor man is deprived of his opportunity to learn a trade and his place is taken by an outsider who has stolen it at the cost of the small outside manufacturer. The American mechanic then, welcomes any fair proposition which will give him a chance to educate his boy so that he can earn a living.

There is a possible use of the trade school which is of vital interest to the trade union men just at present. There is one unfortunate situation which is constantly recurring, and that is the case of a man who has been working at a machine his entire life and finally finds that this machine has suddenly gone out of existence because of a new invention. When a machine is worn out and a new invention comes in the man is also practically worn out, and is thrown upon the scrap heap. A branch of the trade school work is necessary which will deal

merely with the question of skill of a limited degree and not with the broad question of industrial education. If a man is knocked out at 45 years of age and can't get a job on a machine, something must be done. It means utter demoralization for his family. It prevents the attainment of a higher standard of living for the workman. He can neither buy his home nor educate his children. Other workers will observe what has happened to him, become discouraged, seeing no hope nor opportunity before them, and consequently become discontented elements in the ranks of labor. It is the duty of the state and public educational institutions to reach out a hand to this man and lift him over the stile. In the past in some trades or parts of trades, the unions have done this themselves. Notably in the printers trade, when the new linotype machine came in and replaced the hand work, the printers put up machines in their quarters and taught the old men the new machines. The same thing was attempted when the plain loom became the fancy loom, and also in the case of the moulding machine. It is admitted by most labor leaders that this arrangement can be carried out in some trades.

If it is properly organized the trade school will be accepted by the public as a great democratic school, helping the ordinary man to meet the ordinary duties of life. To be a great democratic school, it must be something more than a trade school or an industrial school. As Professor Person says in his book upon industrial education: "A system of industrial education for instance, must not be a rigid, inflexible instrument, attempting to shape all the individuals it touches after the same image. It must accentuate differences of ability and of temperament; it must build up individuality." There is no greater work which the Germans have done for their country than this building up of individuality through the industrial schools. The class distinctions of Germany are being rapidly demolished by an education which allows every man to make the most of himself; an education which puts a reward upon merit and ability, initiative and brain power; an education which allows a man to rise up through the ranks and gives him the intellectual basis for advancement.

We need not only the responsible man as a product of the trade school but we need also the responsible man as a citizen in our state. The industrial conditions which we have today,

the minute division of labor, the fact that workmen feel that they have got to make their money and make it quickly or else be thrown out by old age, the dullness from automatic actions incident to machine tending, etc., must be overcome by inspiration, the teaching of self-respect and the dignity of labor. Says the report of the Wisconsin Bureau of Labor, 1910: "Generally speaking, those industries which require the least mental effort attract a class of employees who are lax in morals. This, in a measure, accounts for the evil reputation of certain candy and box factories." If our industrial education touches only on those trades which are really trades, and does not strive to bring with it a moral uplift in all such occupations, and does not meet the real conditions of the great mass of subdivided industries where automatic skill is used, then it has missed, to a great extent, its aim. There is no doubt that the organization of the trade school so that it will accomplish all this, is a difficult task and one to be approached with great care, but no industrial school system is successful unless it does this very work.

Says the bulletin of the National society for the promotion of industrial education: "It is a difficult problem to discover the kind of training which shall be of direct value to the vast majority of industrial workers who are doing piece work on an automatic machine, who perform a single operation of the 101 in the factory, who apparently require in their work, knowledge of that single operation only, a training which may require but a day to master, and perhaps only a few minutes." But combined as we have this training with the continuation schools, and other forms of educational advancement advocated in this report, it is believed by your committee, that much can be accomplished, and in the end the problem solved, although much experimentation will be necessary and no one remedy will be a cureall.

The manufacturer, who points to our advantage in tool machinery and says that we can hold our own in the markets of the world because we can make the machine supply the place of the man, is near-sighted. He shows a lack of knowledge of history. What he takes for efficiency in certain standardized products, however wonderful they may be, does not demonstrate his thesis. The machine never can take the place of the man, any more than the splendid machinery of a war vessel can

take the place of the brain behind the gun. The man behind the machine as well as the man behind the gun is needed if our civilization is going to last, and although a crowd of men doing automatic machine processes by tending machines, may seem to some to be the acme of civilization, yet in the long run, the greater and more complex the machine the greater the sum of intelligence necessary to get from it the greatest efficiency.

There are those who believe that in the near future, individual skill will be an increasing element in the intensive production of manufactured articles. We are passing from the stage of extensive agricultural production to intensive production, and the same thing no doubt will happen in manufacturing, or at least it is certain that there will be more intensive production in large scale manufacturing. We cannot always keep on producing standardized forms. We cannot exist always with few generals and nothing else but common soldiers, but we must have officers of all ranks and all degrees of skill;—the more complex the machinery, the greater will be the number and the greater the variety of responsible and skilled subordinates.

The president of the Casino Technical Night School of East Pittsburg, Pa., says: "The age of extreme mechanical specialization is passing. The large manufacturing concerns are endeavoring to make all-round mechanics of their apprentices. The great cry is for workmen who can use their heads; who are more than mere routine duplicators; who can take hold of new work and do it right the first time they try it. Manufacturers are also finding out that their workmen are human and that a man with a future of trade advancement * * * before him, with independence and pride in his work and with civic interest in his community will do more work and do it better than the mechanically operated machine man specialist. Absolute specialization will kill the best impulses of human nature and ruin the development of our national endeavor both industrially and socially." The need for group efficiency is apparent in all this discussion.

The German does not use the machine in place of the man to the extent to which we do here, and perhaps in the future this will be an advantage rather than a disadvantage to him. At least it seems that the great investment made in the skill of individuals in Germany would lead in time, to a higher

collective skill, a more intense productiveness and efficiency in a variety of manufactures where the element of personality and individual skill must eventually determine success. Frank A. Vanderlip in his article in the World's work for June, 1906, says: "Notwithstanding all of our advantages we are beginning to find that there are countervailing losses. While we have made it possible for the unskilled man to tend the machine and turn out the product with wonderful economy, we are now beginning to find that keeping that man confined to tending the machine and giving him no intellectual interest in his work and no opportunity, with the narrowest outlook upon the field of industry in which he is engaged, we have unintentionally taken almost certain means to prevent his mental and technical development. We have of late, heard much of the call of the employer for skilled men to supervise work. We have heard employers remark that while the lowest paid ranks of our workmen are fully supplied, they have the greatest difficulty in finding men to fill the higher positions. The reason is of course most obvious. Men need training to become skillful. They must have variety of work if their outlook and technical skill are to have breadth. They must know something of the principles if they are to have valuable original ideas. I believe we have failed utterly to grasp the problem of the relation between education and our industrial development ond prosperity."

All of this shows us the difficulties of the trade school problem. If it does not meet all these varied conditions in an intelligent and effieient maner, the trade school may be an economie loss instead of a gain to us. Whatever such schools should be, they should not be narrow. The narrowness of the industrial experience and of the outlook and perspective of the ordinary man, is the chief reason why trade schools should be established. This narrowness should not be continued in the trade school. If a boy enters a trade school and there picks up superficial knowledge enough to go to work as a journeyman after a few months, it will not be long before such a conception of a trade school will disgust the public or be replaced by a broader and more intelligent conception. Of superficial standards and superficial skill, there will always be enough. It is not the dearth of this kind of labor that manufacturers can deplore with any good ground, because it is the easiest to get and train; it is for the many grades above this

minimum skill which must be provided. It should not be so broad that a man is not fitted to earn a better living at the conclusion of it, or at least has not the foundation necessary for a better wage. The problem is one for profound study, not only for the teacher but for the economist. It is a problem for gradual evolution, for co-operation between manufacturers and employers. Standards should be fixed by both and kept. If the manufacturers refuse to hire a boy who has been in a trade school unless he has a certificate of efficiency; if they can make such an agreement and will not hire men unless such certificates are produced, this will be one great step forward. It will prevent the influx of boys into trade schools who have no purpose except that of staying a few weeks in order to pick up some knowledge of one machine. The trade school cannot succeed unless the employers and employees combine, co-operate and study the problem and then mutually insist upon the standards which are made. The conception of the Massachusetts plan, by which the years between 14 and 16 can be taken up with broad fundamental education directly related to the conditions of industry and the last two years from 16 to 18 be used as a time when greater skill and even manual dexterity can be insisted upon, seems to be a good solution of this question. It is in the first two years that the fundamentals may be laid which later on may lead to managerial skill. For instance, if all stenographers were given a better vocational foundation in business subjects between 14 and 16 years of age and then be given a year or two to acquire skill, there is no doubt that the ranks of stenographers would not be crowded by the almost useless, low paid girls who have no future before them.

Your committee has prepared bills which provide for state aid to trade schools, the establishment of trade schools, and for an investigation of the industrial local conditions, so that the data will be obtained upon which later classification can be based.

APPRENTICE SYSTEM

For a long while manufacturers have tried to rehabilitate the old apprentice system. They are trying to do this now in England. A great many employers in this country who have

tried the o'd apprentice system say that it will not work in America. Another class of employers are equally positive that an apprentice system can be worked out which will be of service here. In fact, they are now working it out. We have been completely discouraged as to the old apprentice system and recently we have received a good deal of encouragement as to the new system. As there is an opportunity for good pay by stealing a trade and obtaining work at once, most boys do not want to go through a long apprenticeship of the old fashioned kind, especially when the wages which the boy receives when he finishes his term of indenture are not greater than those of some man who has stolen his trade, or those of some "handy-man" who has picked up a machine in a "rush" period and who by sheer pluck and ingenuity "made good" at it. This is especially true of our American boys. Quick and alert, they prefer to get quick results and high pay rather stealing a trade and obtaining work at once, most boys do not care to become apprentices, and we are not turning out the thorough workmen of the old standard. In fact, if a man asks for a job in a shoe factory today and tells the emp'oyer that he is a shoemaker, it is very probable that he will not get a job unless he can show skill in one particular process. What are wanted are rapid workers at some particular part of the trade. Again it is apparent that a definition of "apprentice" and a definition of "trade" is necessary in every particular occupation. In fact, many employers say that they cannot get regular apprentices, and Mr. Draper, commissioner of education for the state of New York is the authority for the statement that there are many less apprentices in the trades than the rules of labor organizations allow. However, a good many industries still maintain apprenticeship, and in them, rules are fairly well kept. This is notab'y so among bricklayers, carpenters, plumbers and others. If there is any trouble with the apprenticeship system in these latter trades, it is because they adhere too closely to the manual and technical side and do not do enough in the teaching of the broader things which are essential to a more complete comprehension of the work. For instance, a man may be apprenticed to a bricklayer and have very little knowledge of building construction or drawing or business arithmetic, but he could have these taught to him. This apprenticeship system can be worked out very satisfactorily in

these latter trades in conjunction with continuation schools. The difficulty arises in the more sub-divided trades where the handy-man, extra man, or the man who steals his trade predominates. The compulsory continuation school as outlined previously will do very well up to 16 years of age, but as we have already learned, some of these trades do not take apprentices before 16 years of age. The right kind of an apprenticeship system in these sub-divided trades will be a means of broadening the knowledge of the workmen and filling in a gap in industrial education.

The finest thing in the workman is his ambition, his desire for fine work of an artistic quality, and his pride in his trade. If the comprehension of the whole trade is denied him by a system of apprenticeship which does not carry with it a knowledge of these elements, then that apprenticeship system is indeed of small use. Incapable workmen are produced, and as time goes on these workmen often become burdens on the state because, as has been stated, a new invention comes along and throws them out of work. An apprenticeship system for instance which would teach merely how to sew shoes would not be real apprenticeship.

This kind of apprenticeship is discouraged by the leaders of industrial education in America today. There is no need to waste time on it; it will kill itself. However, the apprenticeship which will teach a man some of the fundamentals in the trade, as outlined in the plan proposed by your committee, can doubtless be worked out. The plan in Milwaukee at the present time by which class rooms are fitted up for workmen in the factories, and the instruction is being given by the university extension division in the factory at the expense and time of the employers, is an example of what can be done. This work should be made still broader in the future.

It is well known that many of the big manufacturing enterprises and railroads in our country have strong special instructional departments in their plants. Most of these combine some general education of a specialized type with the actual manual education, and some of these will form a good guide for us in the study of this question. Many systems of this sort, although temporarily effective, are too narrow for our standards.

Says the late Carroll D. Wright in a paper before the Nat-

ional society for the promotion of industrial education: "Some time ago at a hearing on the subject of industrial education, I asked the manager of a great works engaged in the production of machinery if his apprentices knew anything whatever of the physics of their work, whether they could make a calculation relative to the power applied by the different diameters of driving wheels or of the different sizes of cog wheels, and he answered me very promptly that they knew nothing whatever of such methods. The apprentice system, pure and simple, would not teach them. But the industrial school properly equipped would have taught the men all such things. The thoroughly skilled mechanic ought to understand not only the physics of his work, the science and the mathematics, but something of the art itself. It would then be possible in one of our great modern manufacturing establishments to secure for this apprenticeship system from the industrial school, the very best possible equipment that could lead to the highest efficiency. This is the need of the day in the work that is progressing."

There is no doubt that the extension division of the university can add a broadening element of this kind far the small manufacturer or for the single manufacturer in a small town. The continuation school can do it wherever it is established, and the evening school can be of service in doing it. Part time arrangements can be made with trade schools which can fill in this gap. But whatever form of apprentice system is adopted, it will not succeed unless the apprentice contract contains an assurance of this broad training. It will not succeed, for men will not go into it, since it offers no particular opportunity in the future, and it is not the right kind of an education.

Part time arrangements.—This brings us to the consideration of the whole question of "part time" in apprenticeship. "Part time" schemes have the elements of great success in them, because they are as a general thing by nature "short courses." The value of the "short courses" has already been discussed. Suffice it to say, that if the apprentice works in the factory and at the same time takes some kind of a "short course" work or "part time" work in an educational institution, he is probably getting, if not the broadest industrial education, the most efficient education of which we know, for it is related to his needs, more than any other. However, "part time" arrangements have limitations also; they are often too narrow.

Apprenticeship continuation schools and "part time" schools really differ very little in the main concept; they are all means of giving more training to students between 14 and 20 years of age. The agricultural "short course" is a "part time" and obviously also a continuation school. In the University of Wisconsin, although the emphasis is laid upon the practical dairying, butter-making, stock judging, etc. in the "short courses," yet the broader aspects of education have not been altogether neglected. As has been pointed out, the continuation school in Germany allows the boy who is actually in trade to give a part of his time to school work each week. In that sense, it is a "part time" school. All kinds of "part time" arrangements have been tried. In England the "sandwich system" provides for long periods, 6 months in a factory followed by 6 months in a school. In all cases which have been successful, however, the instruction is made to fit into the actual work. The boy gets instruction especially adapted to fit him for his work in the factory, and ability to answer the questions which he must meet every day.

Fitchburg system.—Many make-shifts are now existing in America which, although they do excellent work, do not accomplish the same results as a "part time" school. The "Fitchburg system" by which a boy working in a shop takes one week in the shop and the next week in the high school, while his mate takes his place, is open to certain objections. In its application to high schools in America it should be carefully studied before being adopted. Unless the high school methods conform to those which we have discussed in the evening school, trade school and continuation school, it cannot successfully do its part of the work. Unless specialized teachers and specialized courses can be given in the high school, the system does not really meet the demands and the result, although it may be good, will certainly not be that broad understanding of industrial conditions so essential to the improvement of our modern conditions. Unless we have special instruction and guidance in the factories and special methods in the school, the results will be much the same as the old apprentice system. The students in this work have not been separated from the others while being taught in the high school, and adequate provision has not yet been made for correlated shop instruction, in fact, a complete apprentice system cannot be said to exist. There is also no general supervisory

body. Employes or organized bodies of them have nothing to say about what shall be taught, or how it shall be taught, in high school or factory. Evidently this plan is in course of evolution. As suggested before, the American Federation of labor does not advocate this kind of an arrangement. In the first place, the boy has to find his place in the factory before he can go to school. In doing so, the American Federation of Labor believes that the whole thing may be open to favoritism.

Cincinnati system.—The Cincinnati "part time" system whereby young men who are being taught in the engineering school are sent out into the shops and factories for a certain time, and the continuation school, where boys are instructed in an arrangement almost identical with the German continuation school, ought to be distinguished from the Fitchburg system. The latter will be in the end just as costly as if trade schools were established. Unless there are teachers and special departments, it will not be a success. To get the teachers in the special departments, the outlay must be made. The Cincinnati scheme has its special departments, and so there can be correlation and co-operation between the school and the factory. There is no alternative. Unless we use the right methods and get the right kind of an instructional force we cannot obtain the best results, and all this costs money.

If a boy goes into an ordinary factory today, and there is no instructor there to take charge of him, he will be put at some one task and perhaps kept at that one indefinitely, and there will be no order or arrangement by which he is promoted from task to task or by which he can get a broad grasp of the subject. Co-operation between the school and factory is essential.

There is another kind of "part time" arrangement for certain of the building trades in Chicago which seems to be of great service. Some of these trades have a "slack" time just as in farming, and there is no doubt that an apprentice system can be devised so that during this time the boys can be sent to school and paid while they are in school, and thus be given instruction which is practically the same as the "short course" agricultural school work. Whichever way is adopted, unless there is an instructional force in the factory our apprentice system will not meet with the highest success.

Your committee believes that an apprentice law providing for correlation between the continuation school and the usual apprentice work should be put upon the statute books of the state

of Wisconsin. This law should provide that at least 12 hours a week of correlated, broadening education should be given until at least 18 years of age or until the apprentice has completed at least 2 years of apprenticeship. The Wisconsin apprentice law was drafted in 1849 and is useless paper today.

Unversity extension in relation to apprenticeship.—We have, in this state today, factory villages. These factories are not large enough to employ instructors, but by fitting up rooms in them for the university extension workers in the manner now provided in Milwaukee, together with the establishment of co-operative classes in the high school, similar to those in Beverly, Mass., a good beginning could be made. If the high school will co-operate intelligently in the plan, and establish classes which will fit into the work done by the extension division in the factory, which will be closely related to the special industries of the locality, it is very probable that a make-shift of some value can be devised. However, before such a make-shift is adopted, it should receive the approval of the industrial department which is recommended by your committee. These matters should be very carefully studied, because they may easily cost a great deal without giving commensurate return, and because of the opposition which may come from trade unions unless they conform to the idea of free public trade education which the trade unions are so persistently advocating.

The modified Fitchburg-Beverly scheme should be closely studied. There is no essential difference between this system of apprenticeship and the compulsory apprentice continuation school of Germany, if compulsion is introduced between 14 and 16 and the apprentice law be changed as suggested in this report. If employers must send all boys between 14 and 16 to school for a short time each week and if they are also compelled to fix their apprentice system so that a good deal of special correlated instruction every week be given, as suggested, until 18 years of age, then the chief argument against the Fitchburg system is removed and the high school can be effective to the extent to which it adopts methods and teachers which will bring about good results.

It is unwise to think of establishing a minutely perfected state system at once. It must be a matter of first steps of growth, of evolution. First steps are all right if they are economical and we know at what we are aiming.

Best results will be obtained in the end, when all such schools

are as far as possible public schools. When they are public schools, they will have the direction from school men as well as from employers and employees; and a compromise between the school men and the employers and employees will be the right one in the end for all concerned. In some trades the compromise has already been made between employers and the employees, and the apprentice system is regulated by both. This is particularly true in some of the building trades. But there is always a third element,—the public, and this element should be considered, in order to have the proper balance. It will be seen at once that there are very delicate questions involved in any system of apprentice work. The conditions of labor, the strife between labor and capital, make this question one of greatest difficulty, when any plan is submitted which calls for co-operation between a private apprentice system and a tax supported public school. For instance, what will become of the apprentice in case there is a strike in the factory? The employees naturally want to have such relations closely defined and are very doubtful about the ultimate success of any kind of an apprentice system which does not have a public school basis.

Beverly plan.—In the Beverly school scheme the factory has a workshop fitted up for 25 boys. One week 25 boys work and the rest go to the high school, and then another division takes its place. The company hires competent instructors in the factory and the city binds itself to provide instruction in shop methods, English, mathematics, drawing, chemistry and other studies. These studies are so arranged that they dovetail into the actual work of the factory. The company takes in boys from 14 to 18 who have passed the 6th grade. The remarkable point and the safe point, both from the standpoint of capital and labor and also from the standpoint of true industrial education, is that the arrangement is controlled entirely by a committee composed of 5 members of the school board, and one or more citizens of Beverly appointed by the mayor. Every factory has a representative appointed by the mayor upon nomination of the proprietors of the factory. As an additional safeguard, the whole is under the control of the Massachusetts commission on education and state aid is given the city of Beverly to carry on the work. This seems a good combination, but unless the factory is as large as the United shoe machine company at Beverly, the shop instruction will not be adequate. It is not often that firms are found

who will see matters in as broad a way as the United shoe machine company of Beverly. There are few places indeed in Wisconsin where such co-operation could be carried out. If successfully carried out, it would provide a means for making the high school a real factor in the life of every community.

Boston continuation schools.—In Boston the merchants and business men have realized the necessity of part time apprentice or continuation classes. Through the splendid work of Prof. Paul Hanus, Mr. A. L. Filene and others, a clear understanding of the value of these arrangements has come about. There is the most enthusiastic co-operation between the different elements. The school committee of Boston announced recently that it would give class room and equipment if the business men would co-operate. The result is that continuation classes have been started in the leather industries, wholesale dry goods and salesmanship. Some of the large stores, like the Filene store, have part time arrangements or continuation schools of some kind, right in the store. In this continuation school program, two afternoons are given every week for these classes in special rooms in the center of the city. The merchants allow their employees to go to the school without loss of pay. The whole problem in industrial education would be soon solved if we had such business men everywhere.

If the manufacturers of the state of Wisconsin, so justly noted for their enthusiasm for industrial education, would join in this helpful manner and if the trade unions would give that hearty support to arrangements of this kind which is given by their brethren in Germany and in England, we could solve the question of part time and apprentice systems very quickly.

Chicago building trades agreement.—The following descriptions of the system now used in Chicago in the building trades is given from a paper by Luke Grant in bulletin No. 6 of the National Society for the Promotion of Industrial Education: "To show that the wage-earners are in favor of industrial and technical education for the youths entering skilled trades, I wish to give an illustration in this city. Through a mutual agreement between the building contractors and the organized carpenters and bricklayers, the apprentices in those trades are required to attend school for three months each winter during their apprenticeship period. An allowance in the length of the apprenticeship period is made if the boy has received a certain amount of technical education before he goes into the trade. At the present

time there are something like 400 apprentice carpenters attending school in Chicago. There are about an equal number of bricklayer apprentices. While the credit for inaugurating this system of education for the apprentices is due in a large measure to one prominent contractor, the workingmen readily took up the idea and have worked hand in hand with the employers to make it a success. In fact the workingmen are now more enthusiastic over the plan than are the contractors.

Although the system was inaugurated only 6 or 7 years ago and is not even now as perfect as might be desired, its effects are discernible in the quality of the young men that are being turned out to earn their living as skilled workmen. I am informed that in a few instances in the carpenter trade, boys have been selected from the ranks and given responsible positions.

During the months the apprentice youths attend school they are paid a regular rate of wages agreed upon according to the length of their term of apprenticeship. They are not under the control either of the carpenters' union or of the employers' association, but are under the control of a joint board composed equally of contractors and journeymen.

If for special reasons, such as the support of a mother or of younger members of a family, an apprentice desires to remain at work instead of attending school, his particular case is investigated and if the permission is granted, he is required to attend a night school in lieu of the day attendance. I should, perhaps, explain that most of the apprentices are paid a higher rate of wages than the stipulated scale while they are at work, and are paid only the stipulated scale while they are attending school. This naturally creates a desire on the part of some of the boys to shirk school if possible, but on the whole the rules are well carried out."

Here is a condition which seems to be almost ideal. But it shows us also how different some trades are from others. It shows us the necessity of investigating different trades with a view to finding out how this "part time" work can be worked out. This arrangement is very much like the "short course" at the University of Wisconsin and such an arrangement could be entered into with a trade school in a big city or with a university extension division in a small city.

In the older countries, the labor unions insist upon the most rigid observance of educational standards by apprentices. If

the manufacturers and laborers combine and maintain the standards as before suggested in this report, doubtless the proper plan can be worked out, but your committee still insists that the public has an interest in the matter and that the public should be bodies in all these arrangements.

Your committee has drafted and is submitting to you a bill for a revision of the apprentice laws of the state along the lines herein advocated.

ADMINISTRATIVE CONTROL

Your committee recommends that state aid for industrial education be distributed by some department created by the state for the encouragement and supervision of industrial education. Preferably this should be division of the state superintendent's department. The law should provide for a secretary who should have charge of the organization and inspection of these schools. It should also provide for a temporary commission lasting 6 years to be appointed by the governor from employers and employees of this state. The director of the extension division of the University of Wisconsin should be an ex-officio member of this commission. It should work in co-operation with the industrial education secretary of the state superintendents' office. This secretary should be appointed by the state superintendent subject to the approval of this commission, and the funds for the state aid for the different schools of this state should also be apportioned with its approval. It should be a very important part of the work of this commission to aid in the organization of industrial trade schools or industrial education centers throughout this state, in very much the same way that the state free library commission does at the present time in the organization of libraries.

State aid should be given only in proportion to the effort made by the community. Your committee has drafted a bill which is to be presented to you, along the lines here advocated. It will be observed that in our recommendation for a separate administration we are only acting on the experience of Germany. In the first place, in that country nearly all these schools were under the general educational department. Prussia began by giving

the control to the bureau of commerce and industry; it finally was transferred to the bureau which controls matters relating to general educational affairs; it was found that this made the work altogther too scholastic and theoretical, and this arrangement lasted for only 6 years, when again industrial schools were placed under the control of the commerce and industry department. For a while there was a tendency directly away from educational supervisory bodies, but recently these educational bodies have been given supervisory power mostly, in an advisory capacity.

There seems to be no division of opinion among experts as to the necessity of placing the supervision in the hands (to some degree at least) of employers and employees. Albert A. Snowden in a pamphlet upon industrial schools in Wurttemburg says that Wurttemburg has in common with other European nations been driven to establish an agency essentially separate from the ordinary educational administration, for the direction of the industrial schools. For history clearly impeaches the ordinary educational administration for the failure to furnish adequate instruction in the industries. It is European experience, that they even fail in many cases to do all that lies within their power in this regard until forced to adopt a practical attitude by the fact that the major responsibility for providing such instruction has been placed upon another ministry (industrial or commercial) or body closely in touch with the industries and the commercial needs of the country.

Professor Ernst C. Meyer, formerly of the University of Wisconsin, who wrote the valuable pamphlet upon industrial education printed as a United States special consular report, volume 33, has the following to say about the administrative methods in Germany: "The experience of Germany in the administration of her industrial schools goes to show that the subordination of the system of industrial education to the same administrative body which controls the system of general education, is unwise. It also goes to show, on the other hand, that the total withdrawal of the industrial schools from the influence of the administrators of the schools for general education, is likewise detrimental to their most efficient development. As will be at once recognized, this is due to the fact that industrial schools have two sides to their constitution—an educational and an industrial side. Proper educational methods must be employed and the educational needs of industry must be wisely judged. One requires

knowledge of educational method, the other of industrial aims and requirements. A wise administration has hence been found to involve the participation and co-operation of two administrative departments—that which has charge of educational affairs and that which has charge of industrial affairs. As was seen, such co-operation, though expressed in various forms, is practically universal in Germany, that department in which is vested the administration of commercial and industrial affairs almost invariably exercising a predominant control, while the educational interests of the industrial schools are generally safeguarded by advisors, councils, commissions, and other bodies well informed on modern educational method."

In the light of the fact that despite the great vigilance exercised by the manufacturers over the schools in Germany, they are still perhaps too theoretical—that too much impractical work is taught, that the student wastes much material, is too slow or makes designs which will not sell; in the light of all this, it seems to us that we should not be afraid at this time to emphasize the practical side. We should fairly meet the situation and through our local administrative bodies and through our central administrative bodies lean towards the practical side rather than the theoretical side of the work. The results will be probably a compromise which will include the best part of the scholastic work as well as the best part of the practical work.

AID FROM CAPITAL AND LABOR

Again there are other reasons why employers should be directly interested and have a medium for expressing that interest. If the employers give their personal attention to this work, contribute towards it, look upon it as the chief aid in their business in the state, there will be no doubt about its success. We not only have to educate our workmen, we have to educate our manufacturers and merchants to understand that every investment they make in time or in money in work of this sort, comes back a hundred fold to them.

Your committee realizes that if the manufacturers of this state organize and contribute with the same enthusiasm to the state wide scheme that they did to the Milwaukee school of trades, the whole matter will go forward and become successful.

If the work becomes theoretical, the manufacturer is to blame. He must be the one who, through his organizations, must insist that the emphasis be placed upon practical results, insist upon thoroughness, and by a broad and liberal policy, strive to build up the skill and ingenuity of the average man. It is for this reason, that your committee believes that manufactures, employers and merchants should have a place upon this state advisory commission. It is the manufacturer's own fault after he is represented on this commission if he fails to get results. If he does not take interest in the local committee, if he does not aim to make each local trade educational center something which will be a benefit to his industry, then it is his own fault if the work is not practical.

Supplementing the regular legal representation, manufacturers should have special organizations to urge upon their members continued action for the benefit of the schools. The trades unions should imitate also the splendid work now being done by the American federation of labor in encouraging the organization of trade schools. Organized labor in England is now contributing a very large fund to industrial education through a strong organization for that purpose. If every trade union man in this state contributed a little mite each year to this great object, it would mean a wonderful return to everyone in prosperity and in the broadening out of the status of his children. For this reason the employees should be given a representative upon the local boards and the central boards. They should see to it that the proper kind of education is given, and that their interests are guarded. The interest of the manufacturer and the employee is after all, the interest of the public.

In Germany the trades unions work with enthusiasm for industrial education. Both in Germany and in France they recommend teachers, attend classes, and criticise the instruction. It is generally expected that labor unions will support these schools in every way and contribute financially. In Germany one finds the labor unions, masterworkmen and manufacturers vieing with each other in their pride in the local schools and contributing not only money but sometimes tools, machinery and designs. This cooperation we must have in America, before there will be any real success in the work of industrial education.

Manufacturers especially can cooperate not only in advice to local committees and in the establishment of schools, but also by a hearty response to the request for shorter hours for the boys and girls so that they can attend the continuation schools or evening schools, in the payment of tuition, in the donation of prizes and scholarships, and in many other material ways. Professor Reber in his analysis of the facts given in Sadler's book on "Continuation schools in England," says that he found the 38 firms out of 97 examined, "pay a part or all the fees charged the apprentices by the schools. In some cases the wages are increased according to combined reports of the teacher of the school and the superintendent of the shop. In some firms the privilege is not limited to apprentices, but applies to employees generally."

In the investigation made by the Massachusetts committee on industrial education it was found that the industrial schools in Ireland "which have been started with a consideration for for local conditions and local demands and in which the instruction has been strong and of the right kind, have flourished, while those they started and managed under the opposite conditions have languished and died out or have been but weaklings if they have survived." It is the duty of the employers and employees to see that these schools are so formed and managed that the lesson of Ireland will not be lost to us.

The carefully worked out system of state aid in Germany is supplemented to a large extent by gifts from local communities and local societies. Thus according to Mr. Arthur J. Jones in his pamphlet, Continuation schools in the United States: "The sources of support for the industrial schools in Berlin in 1896 and 1897 were—

State	86,089 marks
City	329,363 marks
Guilds	9,115 marks
Societies	12,520 marks

This shows also that state aid although a large factor, is supplemented by the enthusiastic work of all the different elements concerned in industrial education in Germany. It is this hearty co-operation which will make a success of industrial education.

OTHER ADMINISTRATIVE METHODS AND DEVICES

There are certain methods and certain details of administration which must be considered, in order that mistakes will not be made in the organization of industrial education. As your committee has said repeadly in this report, it is necessary when we do start, to start right. The problems which your committee is now taking up under this caption have not been entirely solved by them, but as a result of this investigation they would warn those who are organizing industrial education, of their existance.

Shall the students in this work pay tuition? The Y. M. C. A. men who have had experience with evening schools in America will tell you that evening schools conducted by the association are well patronized because when a man pays a little something he will want to get the worth of his money. One Y. M. C. A. man in Boston told one of the members of your committee that the whole success of the system depended upon this small fee. In Germany as a general thing tuition fees are required in all these schools and especially in the evening and trade schools. The plan is well thought of. It is held that it gives incentive to the student who feels he has some investment in the school and that he loses money unless he attends. It is felt also that this tuition is an aid to the better equipment of the schools in the different localities, and that it is just to charge students tuition because of the fact that the classes are so small, heavy equipment is required, and the close personal attention of the teacher is demanded to a greater degree than in public schools or lecture work. In some cases a tuition fee is not only paid by pupils, but also by the employers.

It is obvious that in starting a trade school or any system of industrial education, the question of tuition should be a matter of serious consideration. In America we have believed that such instruction should not cost the man who is working any more than it costs the man who is not working but giving all of his time to study. Yet there is a great difference of opinion among experienced students on the question. John L. Shearer, president of the Ohio Mechanics Institute, says: "A free evening school is not a success as a rule. Those who receive

valuable instruction in subjects that mean better financial returns and greater efficiency, do not wish to be considered objects of charity. The price must be within their reach and in no case will the income from tuition meet expenses. But this tuition should pay a portion of the expenses, and thus lead the man who invests something in himself to appreciate what he is getting. One who is unwilling to make some sacrifice for his own good is not worth much. I recall many cases where apparently worthy students were given all conceivable help but were failures in the end. On the other hand, many who have made sacrifices for their trade developed at the same time noble characters and became useful citizens and important factors in the industries with which they became connected. These lessons of sacrifice were the making of them. Their struggles developed character and backbone, as many a successful man could testify."

The Y. M. C. A. charges as high as $45 for a six months' course. Many of the Y. M. C. A. workers have now admitted that this is too high and a mistake. Mr. Jones, in his pamphlet upon continuation schools in the United States, says, in relation to the Y. M. C. A.: "It must be frankly admitted that as long as the membership in the educational classes conducted by the association is limited to membership of the organization, and as long as it is necessary to hold a $5 annual ticket besides paying for a class ticket, ranging anywhere from $2.50 to $5.00, or even $10.00 extra, not counting the cost of class books, which must be purchased by the men individually, it cannot be said that educational work in this institution is seeking the masses of the poor, for they cannot afford to pay so much for it. The association undoubtedly appeals to a class of more or less successful young men who wish to improve their conditions along specified lines, so it is natural that the men who make a financial outlay at the beginning of the term are not likely to drop out when the work begins to stiffen."

In England every effort has been made, according to Mr. Jones, to get those in charge of such work to charge fees for students attending evening classes, and a report upon this plan in England in 1905 says: "The experience of these years, 1902 to 1905, has tended to confirm them in the view, that a charge of this kind is in the best interests of education. They realize, however, that in a few of the rural districts and in the poorer parts of some

towns, the adoption of the fee charging system requires to be introduced gradually and, indeed, in a small number of cases is still inadvisable." However, in Manchester the fees have been dropped, and according to Mr. Jones, "the increased attendance has amply justified the experiment and the plan has been continued."

In Massachusetts the state textile schools formerly charged tuition, but the industrial commission of Massachusetts abolished the fees after a good deal of experiment and a thorough investigation. In a report upon the industrial work of the International Typographical Union, Mr. W. B. Prescott says: "Though the tuition fees are as close to cost as it is possible to make them, the commission, believing that a taint attaches to a profit making educational system, has arranged that instruction can be secured for less than cost. In order to do this, the union will give a rebate of $5.00 to students who have by their assiduity and perseverence shown themselves to be deserving. This method of reward differs from the usual one of offereing large prizes for a few specially capable students. The commission and the union reasoned that the average man suffered most by reason of the inadequacies of the apprenticeship system, and it is this man the union is most desirous of helping."

From all this discussion it is evident that private institutions as a whole, believe in the tuition system, while in the public institutions there is a tendency toward their abolition. It is very probable that in our state some arrangements will have to be made, at first, for a slight tuition. This was found necessary in the university extension work. Certainly the tuition should be reduced to a point where it is a stimulus rather than a hardship. Of course, with our compulsory continuation school work, it is very probable that there should be no tuition at all, because that work is compulsory and the stimulus is not needed to the same extent. It may be that this whole question of stimulus is exaggerated and that the experience of Manchester and of the textile schools in Massachusetts should be followed in our state. However, your committee has set forth these facts for what they are worth. They have set them forth as a warning, for every school will have to meet this situation as soon as it begins to organize.

There is another administrative question which comes up at once in relation to all this work, and that is the question of some

sort of a reward or certificate for completed courses or subjects. It would seem that some kind of a state examination should be given and some kind of a state certificate issued in accordance with the work completed so that every man who completes work will have pride in receiving such a certificate. The private companies have found this a very good expedient in all apprentice work, and there seems at first glance to be no reason why we could not use it in our public work. However, a difficulty arises upon a more careful examination. The varying standards in varying schools must be taken into account. The different kinds of work makes the problem quite a complex one. The Y. M. C. A. has found it a strong stimulus. It has an international examination, and many colleges have accepted the diplomas from this work. But your committee recognizes that we must not standardize at this time. We must follow free play and elasticity if we are to get the best results from the plan we have recommended.

Sale of produce.—Your committee wishes to put in another word of warning at this point. There are those in the country who would advocate the sale of produce in the manner of the Rochester schools and of the Manhattan trade schools for girls in New York City. The latter school is really a continuation school of the best kind. The girl goes from the bench, where she is actually working upon goods made to sell, to continuation school classes in art, arithmetic and physiology. Certainly such arrangement can be made very satisfactory. The point has been made that it gives a shop atmosphere to the work, but there is another consideration besides this—the financial gain. The Manhattan trade school for girls pays about half the salaries of the school from this source. Some of the other schools add materially to their funds by this method. The subject is a grave one. The possibility of competition with local industries is a matter which must be looked into thoroughly by your governing body. Do the advantages outweigh the disadvantages? The value of trying after new devices and new discoveries at the cost of bungling and making unsaleable goods, is the basis of new discoveries and progress. If we merely make things which sell, a serious change may creep in which may blunt the creative instinct. No trade school established in this state should take this step without the most thorough examination of it from every standpoint. This brings us to the whole question of experimental work.

Experimental work.—We have before shown the value of experimental work, but the question comes up, how can we provide for it? There is just at present a great deal of discussion in Germany upon this question. There are those who hold that the experimental shops do little good and cost out of proportion to what they are worth. There is no doubt, however, that if we can preserve the element of experiment or the element of originality in our school work that it will add a very strong psychological basis to our industrial instruction. All the discoveries in the different fields of industrial life today must not be left to our engineers. Everything possible should be done to encourage the ingenuity of our workmen. Some manufacturers in America today point out that the mechanical engineers are not doing their proportion of inventing. If the opportunity of original work is not cultivated in our trade schools, then we will lose much indeed of the elements of American success. The creation of curiosity, the awakening of instinct and the encouragement of originality should always be undertaken as a necessary part of any trade instruction. If these features do not go with the trade school, there will be a tendency to make our students mere automatons who merely go over and over what has been learned in the past. It seems to us that the state industrial education commission should cooperate with the local board to the end that this question be settled in the most economical manner with the highest regard for both the welfare of the individual, the employers and the public. Some provisions should be worked out: your committee is not at this time prepared to state how, but in the organization of single industrial schools and of the whole industrial educational system, this idea of creation, of stimulus to ingenuity should not be neglected.

Task system.—We have already several times referred to the "task system." The regulation and introduction of this method means the overturning of so many of our traditions that it requires a special discussion.

The task system is after all, the attempt made by many people today to put into the school curriculum *subjects* rather than *set courses* on a time basis. Besides being a means of working out our plans, it also forms a basic condition of incentive. We are in an age of hurry; we want speed in everything; everything is competition. Competition, whatever its

economic faults, is a tremendous force for industrial efficiency and success. If then, we can say to a boy, "You don't have to wait four years or any set time to learn a trade—you can get through in three years if you work hard; the time when you can be a wage earner depends upon the completion of a certain number of tasks;" if we can say this to him, then we will furnish an incentive for him to work intensely, to be alive and wide awake. His course will not be merely time serving: it gives the same incentive which piece work gives him in the factory. The task system is not only the basis of the German trade school work, but it is also the basis of the correspondence school work of America. When the correspondence sheets are completed, then the course is done. It does not mean that a boy has to go to school for one year or two years or any given length of time. After correspondence in the number of courses upon which he works, is done, then he gets his credit.

If the trade school is to be adjusted to the actual conditions of industry today, how can it be successful if it makes no provision for speed, energy and ambition? Speed is one of the greatest requisites of today. Whatever faults there are in this system, they are American faults—or rather American virtues; it is the way American genius has worked out its success. Of course, a remarkable minimum time limit is necessary.

Managers of apprentice schools and trade schools have all given testimony on these points. One man puts all of his apprentices on piece work and pays them on that basis; an admirable system if properly supervised and if made inclusive enough to cover many different kinds of processes. The general superintendent of the motive power of the New York central lines, J. F. Deems, says: "Class room instruction is largely individual, as the same classes may contain apprentices just starting and others nearly out of their time. Educational ideas have been reversed; * * * the work is so arranged that each apprentice may go as rapidly or as slowly as his ability will allow."

Evidently this organization which has, perhaps, the best apprentice work in this country has found it profitable to adopt the German task system. There is no reason why this method cannot be thoroughly studied and arrangements made so that the difficulty in adapting it to our conditions can be overcome and the system be made the basis of the industrial educational

co-ordination recommended in this report. Certainly if it can be worked, it will solve the problem of uniting the trade school, the day continuation school, the high school, and the evening school in one building with one equipment. The difficulty will be encountered in adapting this system to any broader aspects of industrial education which will include of course, some lectures. If the lectures come as a matter of progression, they will necessarily form a time element in the work and yet this difficulty is not unsurmountable. The "task system" is not a cure-all; but worked out in connection with the general scheme, it will be found eminently practical.

The general points taken up in this chapter have been treated here because they deal more directly with the whole question of industrial education, as established locally. The part that the university can play in this work has been discussed from time to time, but it is necessary to consider it more fully in order to see its relationship in all its aspects to all other factors.

UNIVERSITY EXTENSION

The university extension division cannot, from its very nature, do the permanent work of the continuation and trade schools. There is a parallel between its methods and work and those of the early church organizations. It was necesary at first to have some kind of missionary work, as perhaps some little local demand became evident. Then circuit riders were sent around; men who preached one Sunday in one little town and the next Sunday in another; the circuits grew smaller as time went one until churches were built, pastors secured, and permanent organizations established in each town.

The university extension work can follow the same method. When little centers are established permanent buildings erected and permanent teachers secured, then the university extension work can be used as a sort of circuit riding organization for the still higher grades of work until the needs of the higher grades are supplied by permanent organization. In this way the university extension work can form the means of building up the whole system from one which deals even with the needs of a single individual in a little community to a complete system for

the whole state. This very elasticity, resulting in a variety of results by which different grades of students and different grades of work can be taken care of, is just what made German industrial education successful. With a mistaken policy, some of her educational directors, fortunately, however, not the leaders, have recently tried to grade and qualify this work. This has been defeated and the work saved from becoming static. The present system in that country with local schools adjusted to local needs, with varying degrees of schools from the lowest continuation school through to the highest technical school, has been a far better arrangement for Germany, and for that matter can be a far better method to start with in this state, than that brought about by a more strict classification. In the proceedings of the conference of teachers of continuation schools recently held in Germany, we find the following: "Privy Councilor Dr. von Steefeld, who represented the Prussian Minister of commerce and industry, deprecated any minute definition and classification of the numerous vocational continuation schools, intimating that such uniformity would lead to mechanical drill while the greatest merit of the entire system of special schools lay in the fact of its not being a system. The wonderful variety of the vocational schools offered a possibility of adapting the school to local needs or to the industrial peculiarities of the locality in which they were situated. The whole subject of classification and of more definite organization of the system was referred to a committee for a future report."

It is just this element of elasticity which Privy Councilor Dr. von Steefeld advocates, that makes the extension division of peculiar significance. It is fortunate for us at this time that we have this organization in our state. In a state like ours, containing many small villages with one or two manufacturing establishments, the question upon which our whole scheme must fall or must live, is what can we do with industrial education in each little place? The large manufacturer does not have to be discussed. He can teach; he can gather in his apprentices and train them, but most of the factories or mercantile establishments in Wisconsin are not large enough to manage an undertaking of this kind for themselves. Most of our schools in the northern part of the state, especially in the scattered

villages, have not enough money to give any kind of an advanced course. If we cannot give these courses by one means we must give them by another, and the only way in which we can give them and reach out to all, is through the extension division, its correspondence methods and its traveling lecturers and teachers. Professor Person in his book upon industrial education says: "Except in those rare instances of highly centralized states which are able to impose upon their people educational systems created de novo, such an institution must be the result of gradual development. When its scope is enlarged to meet new situations, to reach new classes or to train for new activities, this enlargement should be accomplished neither by creating new instruments unrelated to the general system nor by wholly reconstructing the already existing system. This should be accomplished by developing new members which fit into the existing system and which become integral parts of it."

Wisconsin is not a highly centralized state and cannot impose upon its people an educational system created de novo. The university extension division will not interfere in any way with the existing system, but will add a new member which will dovetail into the gaps in the whole. It will not only fit into the gaps of the whole system, but it will be the medium by which the results of the highest economic research and the results of the best economic and industrial methods can be added from time to time. It will be a long time in this state before every city of the third or fourth class can have any very efficient higher industrial education. The elementary grades will necessarily be taken care of first and the simple needs administered to. If the spirit in which this report is written be carried out, the greatest number will be served in a little way until something can be done for those who demand more special work. But it is by means of the extension division that these special cases can be taken care of. If a young man outstrips his competitors and by extraordinary brightness devours the educational opportunities of his prescribed district, there will be only one way in most of the cities and villages to take care of him, and that is by allowing him to expand through the extension division. Classes for foremen have been formed in Germany and in some of the evening industrial schools in Bos-

ton. There is no doubt that in smaller places it will be a long while before special classes of that kind can be formed in Wisconsin. Until these classes are formed, then, these different grades must be taken care of in some way, because these men cannot leave their positions and go to school. The school must come to them in some way.

Says a Bulletin of the New York State Educational Department: "Experience teaches that evening schools are so overcrowded in the elementary course that these advance students suffer through insufficient attention. If specially provided for, they might become our foremen, superintendents, and teachers. Not only must each school year's work be driven home and clinched, but each series of year's work must be so clinched as to meet the needs of industries which shall demand thoroughly trained men for foremanship."

When we have scarcely any evening schools in Wisconsin at the present time, how are we going to meet this need? The fact that the investigation made about five years ago by a member of your committee showed that at least 35,000 students were taking work in private correspondence schools in this state and the fact that the Massachusetts educational commission found at least 50,000 men and women taking work in like schools in Massachusetts, is unanswerable evidence of the great demand for this kind of work. If the need did not exist, people would not be paying their money. If they could have evening schools ready at hand, they would go to them, but it also shows that there is a demand for instruction right at home, for work which can be accomplished by a single individual after his day's labor.

The extension division of the university not only has proved this, but it has worked out new means of teaching. Its group system has been a vast improvement over the work done by any of these correspondence schools. It is now capable of taking a workman at any stage and dealing with him as an individual; it can take classes of two or three men, or take classes of ten men or more, as is now done in the shops of Milwaukee. These classes can be cared for until regular teachers can be secured and regular centers established, thus meeting the new miscellaneous needs which are constantly coming into being.

This method will be an economical one for our state, because it insures a gradual and healthy growth. No impractical work

will be done. It will not create de novo but it will be a stepping stone from the old to the new.

It does not seem impossible for the engineering school at the University of Wisconsin to extend its summer school work so that high class mechanics can come to this school just as the farm boys now go to the agricultural short course. The beginning of a school such as now exists in Chemnitz, Germany, where thousands of this class of students assemble from all over Germany and go back to fill up all grades from mechanical engineers down to skilled tenders of engines, can be established. For the adult, who is ambitious to learn some technical process of a special kind, this work can be of particular value. For those who have passed the trade school period, but who must work or have families to support, the different methods of correspondence teaching can be used. Where the evening school does not exist or where it is rudimentary, then the university extension work can always fill in.

Your committee, however, believes that liberal provision should be made by the state of Wisconsin for this work, and the cost of it to the individual should be materially reduced. The work has shown its worth, but the cost should not fall so heavily upon the man who is striving to improve himself. Such a man is the best asset the state has, and the state can well afford to give him the education he wants at a greatly reduced cost.

The university summer school should be better articulated with the whole system so that by cooperation between this school and the correspondence methods and other methods pursued by the extension division the best results can be secured. Your committee, therefore, recommends that fees in the extension department be reduced, and that the appropriation for this department be increased.

Movable schools, institute methods, traveling professors, short courses, lectures—all these means of connecting the educational centers with the people, are not new. They have been tried all over Europe. As long ago as 50 years, traveling teachers were at work in Austria and Germany, and many of the good lessons learned in continuation schools and the trade school work of these countries came from the beginning made by this kind of teaching. We have, it seems to us, in the Wis-

consin Free Library Commission, a cooperative method which has not yet been fully developed because of lack of funds. The traveling libraries in cooperation with the extension division, can bring into our small industrial centers not only the industrial and technical libraries necessary, the most up-to-date instructional material upon every phase of industrial life, but also all other necessary traveling equipment of all kinds. Traveling books in small villages will solve many of the questions of research, and traveling apparatus would, it seems to us, to some degree at least, supplement this work.

TEACHERS

In our description of German industrial education it was shown that even in Germany the complaint is made that good teachers cannot be secured. The ordinary man from a technical school is too theoretical; the ordinary skilled workman cannot teach well. In spite of all the influence of manufacturers, the work is still too theoretical, because the teachers are too theoretical. This system could be easily remedied in Wisconsin. We have scarcely any traditions of industrial education to fight in this matter. Therefore, we can do what we are doing in agriculture. The boys from our long course agricultural courses are now becoming the teachers in the Wisconsin agricultural schools. This same thing can be done in the mattter of good trade school teachers. With our workshops at the University, with our school for artisans, with the university extension work, we should be able to fill the needs from the division of the educational school of the university, which has for its purpose the training of teachers of trade work. The establishment of a school for teachers of industrial education is greatly needed in this state. With the criticism which can be given to the methods pursued in such a school by the actual workers who are now in the field for the university extension division and who are teaching in the shops and factories in close relation to the problems which the manufacturers have to meet, a school for trade teachers situated at the state university will have great advantages over any other school in the country. The men who wish to be teachers in this work can be given chances to teach in con-

tinuation schools wherever established in the state, for practice work. Such men can be required to spend a certain time in the actual work in factories in the state in order to obtain their certificates. Thus we can combine the proper teaching methods with the actual practice. In this way we can build up a body of men who can supply our teaching force in our continuation schools, our trade schools and our technical schools.

In Ireland a plan has been recently started to instruct teachers. By this system, schools that are now open in three or four large cities in Ireland give training for men who are already in industry and who want to teach the trade in which they are proficient. Summer schools are also provided for teachers who are teaching the common branches and have been trained in the general school work so that they will get the practical instruction so necessary in order to become an efficient instructor in the trade school. The University of Wisconsin could open such summer schools and it would be well perhaps to centralize the work there for a while in order that the most thorough and practical methods could be worked out, and in order that the manual training spirit will be superseded by actual factory spirit.

We should not recruit our teaching forces in this state from manual training teachers who have already set ideas upon the subject of teaching. Rather we should go to the opposite extreme and take practical men and give them summer school short courses.

In local districts also various expedients can be used. In England some of the most successful work has been done by allowing the local trade unions to select teachers in trades from among their skilled journeymen. Of course it is easier to select teachers of this kind for the skilled manual work than it is to select them for the general school work, such as the teaching of citizenship, English, physics, chemistry, etc. It is easier to select plumbers and carpenters or cabinet makers than it is to select good teachers with the right standpoint for the other work.

TEXT BOOKS

In Germany it is generally thought that text books cannot be written which will fit into the varying needs of industrial education. The Germans believe that the text books must vary, as the needs vary in localities and industries. There are then, comparatively very few text books. Every German teacher works out his tasks and keeps his task book for himself. It may be that there is another reason that Germany is not anxious that text books be printed; there seems to be a fear that other countries will get hold of her methods or her secrets. Whatever the cause may be, a great loss is apparent here, as the same work has to be done over and over again, as it often happens that when a good teacher leaves the work, the best methods go with that teacher.

The success of the International correspondence schools and similar schools in this country in printing their own text books shows that clever, up-to-date text books can be published which will be of the greatest service in industrial teaching. The university extension division has already begun the preparation of books of this sort, and it seems that a system of industrial educational leaflets could be issued, at very small cost, so that the best experience and the highest skill of the best extension teachers can be put into these text books and distributed among the scholars in the continuation schools and trade schools throughout the state. This is another advantage to which we fall heir, through the existence of the extension division. These text books would cost our state very little, as they could be sold to surrounding states and the demand for them throughout the country would doubtless be very great.

Your committee believes as an essential element in the success of these schools and as a directing force toward right methods, that the text books now existing in manuscript form among the extension teachers should be printed by the university and arrangements made for the distribution of them at cost, among the trade schools and classes as soon as they are established.

SECONDARY CONSIDERATIONS

It was the German philosopher, Humboldt, who said: "Whatever you put into the State you must first put into the schools". If the industrial education advocated by your committee will lead merely to a better economic man, it will not reach its highest aim. It must be judged by its by-products as well as by its result in dollars and cents. It must be judged by its effect upon the life of the people and upon human happiness and a varying number of our great problems, social and economic and moral, with which we have to deal today. To be in its truest sense efficient, it must be a truly democratic education, an education which will fit all the needs of all the people. This does not mean, then, that it must be merely utilitarian, but the effect of it must be such that we can answer definitely the question; will it improve the moral situation? Will the boy who is industrially educated under this system be a better man or a better husband? Will he be a better citizen? Will he have a higher sense of moral obligation? Will he be more truthful, honest? Will he have a better Physique? Will he be a better factor in our life today?

It is obvious that in order to make this system so that all these questions can be answered in the affirmative, additions must be made to the industrial program. The Germans have not forgotten to do this. They are noted as a law-abiding and patriotic people. There is no doubt that the system by which citizenship is taught in the German continuation schools has its effect upon this spirit in that country.

In this connection, Dr. George Kerschensteiner, of Munich has the following to say: "* * *As you see, professional efficiency is put foremost because those who cannot stand upon their own feet vocationally are unable to help others and prevent them from falling. But in closest contact and intimately related with vocational education must go the second aim of our programme; to develop insight into the connection and relation of the interests of all citizens alike, and especially of our country, to take care that that interest manifests itself in the exercise of patriotic self-sacrifice, justice, self-control, co-operative spirit and rational hygiene, sensible frugal habits of living. If

we keep the first aim only uppermost in our educational endeavors, then there is danger of training up an excessive professional and individual egotism."

"And just here we touch the critical point in our consideration of the value of industrial schools and education. If we instruct the prospective industrial mechanical worker not only in the mechanical-technical part of his trade but likewise introduce him into the mysteries of social and economic conditions, not only of industrial life but with equal interest into the social and economic life of the community and nation of which he is a citizen; if we train him from early youth to make him feel that he is a part, however small a part, of the larger whole of the nation to which he is inseparably tied by all his interests, then he will be more or less able to counteract and modify, if not to annul, the evil tendencies of modern industrial conditions.

"We should not forget that economic and social conditions are not only the product of natural laws but to no small degree they are the product of the moral and educational standards of the people * * * ."

There is no doubt that industrial training in itself will be of great service in creating the sense of order, discipline and patience so necessary to good citizenship. Commissioner Draper in an address in Albany in 1908 said: "I hesitate not a moment in saying that good citizenship, and the thrift and morals of the country are quite as dependent upon the mass being trained to skilled work with their hands, as upon a class being advanced in scientific knowledge or in professional accomplishments. The greatness of the nation is contingent upon bringing the truths which science unlocks, to the life, and particularly to the vocations, of the people. But that can be done only where a people is inured to work; where they have, and love, vocations.

The successful workman is a happier man and a more reliable citizen, a much larger factor in giving strength and balance to his country, than the unsuccessful or the only half successful professional man. It adds little to one's value as a civic unit that he be elaborately trained in theory, or in science, or in skill, if his training has been at the cost of his balance; if he knows one thing at the expense of many other things which every good citizen is bound to know, and of that balance which every good citizen is bound to have. And it makes little addi-

tion to the strength of a nation that some of the people have the highest learning, even that the advanced schools and the professional life are overcrowded, if the masses have not love and capacity for *growing things* and for *making things*."

Now if we can supplement this splendid fundamental training with some definite knowledge of actual conditions and real appreciation of government, there is no doubt that the results will be those sought for. The teaching of civics has been recognized as difficult, and is too often poorly done, but even the little civics which is taught in our high schools is something. Nothing practically has been done in the common schools. The boy leaves the common school with but rudimentary ideas of his duty towards this government. Indeed it would seem to your committee that the same methods which have been used so successfully in industrial education, could be used in the teaching of citizenship. There is at present a widespread movement which finds expression in boys' republics, in citizenship classes in schools, and in patriotic plays, all of which tends to dramatize or visualize the teaching of patriotism and citizenship. All of this, it seems to us, could be in some degree adopted in all industrial classes and we believe that no state aid should be given unless some such teaching be a part of the curriculum of each school.

In this connection, the debating department of the university extension division could be of great service. Its outlines for debates upon public questions could be used by these classes and the necessary traveling data or traveling libraries could be sent to them. There is no better way of learning than by debating, and a sound and thorough knowledge of public questions can be acquired in all continuation, evening and industrial schools by this method.

There is no doubt that courses in hygiene, sanitation, protective devices in machinery as well as the courses in citizenship, are indispensable in these schools. They are seldom or never omitted in the best continuation schools abroad. In practically every continuation class in Munich a boy has to take one hour a week of this training, for four years. The cumulative effect of this upon citizenship is very great; as well as upon the health and stamina of the race and cannot be underestimated.

The combating of political corruption, as well as physical disease, is one of the great by-products of this work, the effect

of which has not been fully understood in connection with other correlated movements in Germany. Sanitary conditions of factories, sanitary conditions of homes, progress towards health and the fighting of disease, the economies practiced by the cutting down of injuries and of sickness caused by carelessness in factories, the cheapening of industrial insurance—all come from this source. These are powerful influences which are basic and cannot be omitted. It is but a truism to say that intelligence is aided when disease is curbed and good, cleanly conditions exist in the home.

Reformers in America are striving to get some knowledge of why corruption is rampant here. We are fighting political corruption and physical disease at the same time. We may have reform periods or spasms; we may create temporary organizations for the purpose of reforming government; we may deliver lectures, or our magazines may lead in pointing out the defects in government, but we will never get a true sense of obligation to the state until we teach that obligation. If we teach this in college or the high school we will not hit the mark. How can we, when four-fifths of the boys and girls do not go to high school or college? We never can completely fight disease, political or physical, unless we teach these four-fifths in some way, how to fight.

Our great success in the battle against tuberculosis comes largely from a determined effort to educate our people in a knowledge of that disease, its prevention and cure. We can never eradicate political corruption unless we use the same determination and begin at the time when a young man can be taught something about citizenship. Our lawyers tell us that very little can be done by legislation; that we cannot make people good by law. The Germans look upon the law and the state as great moral forces, but it is doubtful if the lesson of moral obligation would be any more effective in Germany than it is in this country, unless this same foundation in education exists.

Consider tuberculosis for a moment. We had in America a few years ago awful conditions in the slums of our cities. We had what were known as the "lung blocks." It was the custom to allow the poor people who had tuberculosis to die in these horrible unsanitary tenements without doing anything to eradicate the scourge. If a man was seized with tuberculosis, people said: "Well, what can we do? He will die. We can do noth-

ing." Scientists had for a long time known that if patients could be segregated and fresh air and cleanliness could be provided, that we would stand a good chance of winning the battle against tuberculosis. That terrible disease had its main seats in the horribly over-crowded sections in our cities, inhabited mainly by immigrants or the sons and daughters of immigrants. What was done about it in the end? With desperate odds against us, we began a great campaign of education. We put enormous sums of money into the fight to teach people how to overcome this great plague. Now we are winning the battle and we are driving this disease out of our cities and our country—*by education.*

We have eliminated other diseases as the result of this great movement and as a by-product of our methods. By teaching cleanliness, fresh air, sanitation, we have helped to drive away typhoid fever and pneumonia, and to raise the physical and mental standards of our people. Our political disease goes hand in hand with our physical disease. It comes from the same source. It comes largely from the over-crowded, unsanitary districts in our cities. It comes largely from alien population pouring into the country at the rate of over a million a year. However good the stock from which they came, the great majority of our immigrants know very little about the history of our country; in fact, hardly know what American citizenship is. They come in contact with the worst types of citizenship we have among us; they see the deference to wealth acquired by corruption, and the general carelessness of our ideals concerning government. They naturally form their ideals under these conditions. Is it any wonder that when nothing is done to cure political corruption, it should be as rife in these places as tuberculosis?

When an immigrant comes to this shore, he has to wait five years before he is naturalized. In those five years what education in citizenship does he obtain? He sees the poor in the slums around him, he realizes the desperate fight for existence, he often finds that his only help in that strife is the political boss or the corrupt politician. He cannot help getting a perverted idea of citizenship. How can we fight this political tuberculosis and have any success? Does it seem possible that any industrial prosperity which comes from industrial education will be of any real use to us in the future, if conditions

similar to these exist? If we strive to build up prosperity through industrial education without building up the health of the average man or average woman, and without building up true citizenship, we will not have really democratic education. Any industrial education without these other factors will be a dismal failure. We may pass all the resolutions we want to, but the only way to cure political corruption in our cities is to cure it the way we are stamping out tuberculosis—*by education.*

The following taken from a bulletin of the Massachusetts industrial education commission report is an outline of some of the required work in the continuation schools of Munich:

"(c) Studies of Life and Citizenship.—This instruction will supply to the pupil the recognition of the necessity of a reasonable conduct of life. He takes up on the one hand the problems of hygiene, and on the other hand the questions of living which result from his duties to his vocation, the community and the state, in order that he may obtain a clear insight into the necessarily close connection of the interests of all classes of people and trade groups.

"Class I.—Hygiene: The structure of the human body. Breathing, nourishment and circulation of the blood—means of subsistence and enjoyment according to their value and worthlessness; the care of the skin and teeth; dwelling and clothing; work and recreation; the harmful influences of the trade; maintenance of cleanliness. Deportment. Conduct at home; in school; on the street; in society; toward teachers and helpers.

"Class III.—Citizenship: The communal condition. The problems of communal groups; their social and economic arrangements. Rights and duties of communal citizens; communal titular officials. The constitution of Bavaria. Problems of state federation. Duties and rights of citizens of the state. State titular officials. The Bavarian state government. The system of government of the German Empire. The problems of the Empire. Social legislation. Trade and commerce in the nineteenth century, and their significance for the well-being of the citizens and of the industrialist."

The courses in safety devices will be of special interest to manufacturers at this time. There is no doubt that workmen's compensation acts and various insurance schemes of a similar nature will be very soon passed in America by all the states.

Courses of this kind will be a blessing to the workman and will be a source of economy to the manufacturer.

To-day there is a great movement for the medical inspection of children. This medical inspection in the cities where it has been tried, has proved that many children can be brightened and dullness prevented. It has shown that a great deal of the waste and human wreckage comes from poor physical condition. The examination has shown a large percentage of obstruction to breathing, of throat and eye troubles, and of curvature of the spine and similar diseases. But this medical inspection exists only in a very few cities and in a very superficial way. It seems to your committee that the workers in the factories should have the benefits of medical inspection extended to them and a chance to build up impaired health or to cure deformities. Incipient cases of tuberculosis could be noted at once if these courses in hygiene included medical inspection in all the continuation schools, trade schools or evening schools. If in colleges and high schools we have gymnasiums, physical examinations, etc., it appeals to our reason that we should have the same thing in all these schools for our industrial army. It is only reasonable that the continuation school should be a great factor in building up the strength of the people if this kind of instruction and examination were instituted there. If it is an investment for the state or city to put large sums of money into colleges and high schools for gymnasiums and health instruction, then surely it is an investment of a greater degree to do the same thing for the great mass of the people.

In Germany some periods each week are given to gymnastic work. It must not be forgotten that the splendid "Turner" movement is now being connected with these schools. Nearly all the continuation schools have some kind of gymnastic work, and many of them have physical examination.

Vocational direction.—The Germans try to fit a boy to the vocation which he undertakes. Pamphlets are sent out describing the standards of strength necessary for certain different trades and warning parents and children what diseases are inherent in certain of them. For instance, if a child has a history which may show a tendency toward tuberculosis, then that child is directed away from occupations in which the statistics show that a high rate of tuberculosis exists. If a child is physically

not strong, he is not advised to go into a trade where physical strength is demanded.

This question of vocational direction is involved with the question of sanitation and hygiene. Vocational direction is used in the state employment agencies and labor exchanges in Germany, and it has now been tried in the schools of New York and an official has been secured whose duty it is to see that the work is properly carried out. In Boston, too, a vocational bureau exists and in many of the Y. M. C. A. and social settlements, vocational direction bureaus have been recently established. It seems to your committee that as an integral part of this whole system, vocational direction should be used in continuation schools, evening schools and trade schools. Your committee does not care to confuse the issue by recommending too many newly tried educational experiments, but it would suggest that this may be a matter which can be left to the discretion of the industrial education commission which your committee has recommended. Certainly medical inspection and vocational direction would be valuable assets and valuable investments to any system of industrial education.

Social factors.—Your committee has already called attention to the fact that in England and in many of the private evening schools of America, attempts have been made to counteract the social dissipation of our times by bringing together young people in healthy social diversion in the evening. The university extension has recently secured a director who is to build up the work of making the schools social centers. It would seem to us that this is not a fad; that the proper development of social functions would be a great stimulus to education. Boys and girls cannot work all the time and must have certain social diversions. These social diversions can be the incentives, as has been pointed out, for other and more serious things. As Mr. Jones of the New York department of education says of this work in England: "Each school is for the most part a little center of life and civilization, not merely a collection of classes. One advantage of this work is that it develops the feeling of coherence of the spirit of democracy. Social gatherings are allowed in the evening school rooms once a month or on evenings when the school is not in session. No fee is charged for this. The schools are in a measure the social clubs of the common

people and are of very great influence and importance." It would seem to your committee that this socialization of evening schools through the extension division is an important element in this work, a great incentive to education and a very real need in the life of our people today.

MISCELLANEOUS SUGGESTIONS

Blind alleys.—It is very easy to fix the connection between the elementary industrial classes and the higher classes or the university. It will be very easy, for instance, to give a boy a chance to continue toward higher education, by making provision for a connecting link—a course from which students of the county agricultural schools and industrial schools can enter the university. This could be so arranged that the boy could enter classes in the university along the lines in which he had already specialized and at the same time be prepared by means of subcollegiate courses, in subjects in which he is deficient. In this manner he can go on to the highest grade work. Such a course would cost very little, and would form the one connecting link between trade schools, county agricultural schools and the higher education which so many opponents of industrial schools point out as necessary in America. The same principle could be applied to any of our normal schools.

As has been suggested previously, in the continuation schools until a boy is 16 years of age he should be given, with the approval of the authorities and his parents, a reasonable choice of subjects not related to the temporary occupation in which he happens to be engaged. This certainly will answer the argument that a boy once in a trade will have to stay in it if he goes to the industrial school. If carefully supervised, the boy who is already working, can go on through the continuation schools and work his way up the ranks in the same way as his more fortunate brother. There are blind alleys in education at the present time. They can be abolished by industrial education, commercial education and continuation schools, and instead of forming class distinction, these schools will help to break up any tendencies towards social gradations just as they are now helping to break up class distinction in the old countries.

Cost.—There may be those who will hesitate at the cost of this system. It is not a question of cost at all—it is an investment. Says James E. Russell at a meeting of the Columbia college convocation: "We accept the politician's dictum that we are too poor to spend more than we do on education, when the fact is that we are too poor to spend so little. More, much more, than we now spend on education would be money in our pockets if only we knew how to spend it right." In business we do not ask, "How much will it cost?" without thinking "How much can we make out of it? Is it a good investment?" We do not have to defend the appropriation of any reasonable amount of money for this work, as it is an investment and will bring back prosperity and happiness to the state.

Should be always for the many.—Finally there are some warnings which your committee wishes to give. There will be of course an inevitable tendency to make educational institutions aristocratic, to work for the few rather than the many. We must see to it that trade schools remain trade schools in fact. Time and time again institutions have been started in America with the ideal of reaching trades or industrial education, and after a while one advanced study after another has been introduced until these schools become technical institutions. The original purpose of what are now our engineering colleges in our state universities was to reach trades or mechanical arts rather than merely engineering. There seems to be something in the psychology of the teacher which makes him prefer to teach a few high grade scholars rather than the general mass of the people.

With this warning before us, every effort should be made to keep industrial education from going this course. The institution of general and local committees of employers and employees as proposed by your committee has been an effective device in Germany and should be as useful here.

PART III.

Agricultural Education.

In presenting briefly the situation as it relates to agriculture, it has been decided to limit the discussion to the conditions as they exist in the state since an attempt to treat of agricultural education broadly would involve a treatise. The two phases of the subject considered are—the value of agricultural training and the condition of agricultural teaching in the state and suggestions for its further improvement.

THE VALUE OF AGRICULTURAL TRAINING

Agricultural teaching has a dual purpose, and no discussion of the broader phases of agricultural education can treat this subject fairly unless these purposes are so clearly set forth that there is little chance to lose sight of them or to confuse the issue by limiting the discussion to a mere "utilitarian" point of view.

The advocates of agricultural instruction claim for it a *high educational value* as well as a *very great economic one.* It is these two values that we must keep clearly in mind in this discussion. Agricultural teaching may, if properly taught, do as much for the child in giving him a body of useful information, *(in developing his mental powers)*, and in broadening his outlook and giving him greater opportunity for the proper enjoyment of leisure hours, as any other subject of study.

But agricultural training is of very great economic importance. The simple statement of a few facts will make apparent the validity of this claim. The possible Wisconsin corn crop is materially reduced through ignorance of proper methods to be used in the selection, care and testing of seed corn. In many

portions of the state the producing power of the land is impaired fully 25% through the inroads of Canada thistles, quack grass and other noxious weeds. The dairy industry now amounts to $80,000,000 annually, yet the average annual yield per cow *is about 150 pounds of butter fat*, or not more than one-half of what it might be if well known facts were used as a basis for practice. The annual loss from insects to Wisconsin farmers is not less than $5,000,000, yet much of this may be saved through the use of proper methods. But this is not all. To those who engage in farming, agricultural training so awakens the intellect to the various processes of nature involved in the occupation, that the industry itself may afford the keenest pleasure.

It will be admitted, without argument, that the farmer should be trained for his work, but is his education to be limited to the needs of his calling? No one will deny that every man, no matter what his vocation, should be informed on many matters outside his own calling, and that his training should put him in possession of information that he seldom if ever needs to use. Such an education is the right of every Wisconsin boy and girl, whether the lot be cast in city or country, and such an education the schools of Wisconsin should furnish.

The ability of the schools to impart this kind of an education is limited in several ways, but their opportunities, at the present time, are well nigh unlimited. At the present time it appears that the chief problem of universal education in this state is that of providing adequate vocational training and at the same time maintaining the proper balance between these subjects and general education.

In all schools the local needs are worth considering but they should not be the only factors. The general needs, the need of the country at large, the need of the times, should receive full consideration. Approximately 8% of our population are business and professional men. They are comparatively well provided for. The other 92%, belong to the industrial classes. One-half of these are farmers, the other half artisans. Our regular day schools should contain courses of study for training farmers along broad general lines. Nearly all of our girls become home makers and this training should also be provided for by courses in domestic economy. These courses should not be restricted to vocational courses designed to teach simply bread-

making or steer-feeding, but should give a broader outlook and a range of vision much beyond them.

The State of Wisconsin has already provided trade schools for farmers in the form of county schools of agriculture, and these afford an opportunity for those whose attention has been directed to country life to get much valuable training that bears directly upon the vocation of farming; but the state has not done what it should to direct attention to the vocation in which one-half her population are directly engaged and upon which all her people are dependent for subsistence.

To those who have carefully studied and are familiar with the existing social and economic circumstances of country life, at least *two* pressing needs must be met before the children of rural communities will have any fair opportunity to receive that kind and amount of education to which all children in the state of Wisconsin are entitled; and before the conditions and the standards of life of that great proportion of our population, directly and immediately dependent upon a proper conserving and developing of agricultural resources and interests, may be permanently improved. These larger and more fundamental needs are brought forward here because any radical betterment of as large and as important a group of industries as exist in the state are dependent upon them. Agriculture is primarily dependent upon the raising of the level of the effectiveness of all those grades of instruction that constitute the common school. Indeed, measures will need to be devised to affect directly the industrial efficiency of the great army of young men and women who must look to the rural school for their education preparatory to life.

BETTER TRAINED TEACHERS

First of all, the public school serving the people of any agricultural region must be in charge of teachers both competent and properly trained for their work; that is, competent and trained, not only for the effective conduct of ordinary school instruction, but also for the increase of the industrial efficiency of all the pupils whether boys or girls. That this is now the case, except in rare and conspicuous instances, will not be claimed by any one having a reliable knowledge of the country

school as it exists generally throughout the state. The disinclination of rural communities to make any effort to provide either sufficient financial or moral support of the school as it is in its present form, and the relatively small proportion of the boys and girls of these communities, from twelve to sixteen years of age, in these schools, are striking testimony of some great lack. That lack, in a word, is the absence of instruction that is vitally concerned with the economic welfare of the agricultural class as a group or as individuals. Such instruction cannot be given without competent instructors.

In 1901, the legislature added Agriculture to the list of subjects in which candidates for teachers' certificates should be examined; and in 1905, it was enacted that agriculture should be taught in every district school. That neither of these measures has as yet resulted in any great benefit to agricultural education is generally recognized. Nevertheless, they have indirectly accomplished a valuable end by emphatically calling public attention to the need of vigorouly attacking the problem. Agricultural instruction will never be satisfactory in the common or high schools of Wisconsin until the state sets about, in a determined and conscious manner, fitly to prepare teachers for this task. Under existing conditions, many teachers are immature and inexperienced, and the requirements for legal certification are far too low. The enactment of the legislature of 1909 (Chapter 378) requiring every applicant for a certificate to have attended a professional school for teachers for at least six weeks, is one which, if followed by enactments establishing additional requirements, will gradually lead to improvement. But the process may not be delayed without great loss.

At the present time, out of 785,000 persons of school age (4 to 20), there are approximately 475,000 pupils enrolled in the public schools of the state. Of this number, at least 250,000 are being educated through the schools, which should educate chiefly for the agricultural industries. In all probability, at least 50,000 more pupils should be in these schools. Of the total number of public school teachers in the state (15,000), not less than 9,000 should be able to teach effectively, from the agricultural point of view. Not that the field of activity of the rural schools should be restricted in any way; but the necessities of the great majority of the pupils should be the basis for the organization of the work of the common

schools of the country. This is not the case; neither will it be, until the people of the state and their representatives become alive to the great injustice done to the boys and girls, who, by circumstances, must obtain practically all of their education in these schools. The great question of vocational education is fully as important to the country as to the city; as important to the farm as to the factory. Effective agricultural education is in the end a matter of finding effective agricultural teachers.

For the betterment of the teaching of agricultural science and practice in the common schools, the resources available in all the state institutions for the training of teachers will need to be utilized to the largest extent. The county training schools for teachers have proven their worth. It is extremely desirable that the standards of the existing schools of this kind be gradually raised so that their graduates shall have a longer and sounder training than is possible under the present organization. The question of ways in which the several normal schools of the state may be enabled to contribute to the solution of the problem of agricultural training in rural schools is one worthy of careful consideration. When the issue becomes more clearly defined, undoubtedly new avenues of usefulness will be discovered for the normal school, especially in the direction of educating and training teachers for vocational work in the state graded schools.

It would seem that the largest responsibility rests with the University, especially with the College of Agriculture, for providing ways and means for the training of special teachers, and supervisors of agriculture, and principals and superintendents of schools serving an agricultural population. No other institution in the state has, or can have, equal facilities and men for effective instruction. A certain proportion ($5,000) of the Federal appropriation to the agricultural college may, under the Nelson amendment of 1906, be devoted to the training of teachers. The establishment of the Department of Agricultural education in the College of Agriculture, in 1908, marked the beginning of a new and positive policy. Through this Department and the allied departments of the University should come those men who are to be the leaders and the pioneers in the establishment of successful vocational education for that part of the people of the state engaged in agricultural pursuits.

State Aid for Agricultural Training

A new policy is now needed whereby special subventions of the state may be utilized for the development of those phases of education which represent the more pressing needs of the day. This new policy should be directed to the encouragement of both agricultural and industrial training.

One conclusion is perfectly clear, namely, that carefully planned agricultural education, adequately subsidized by the *state*, looking toward the readjustment of existing educational institutions should be made.

If any state-wide plan for industrial education is projected,—and certainly no plan can be state-wide that does not include adequate provision for the elementary education of agricultural workers,—the two factors considered will need to become objects of legislative attention; (a) Provision for better facilities for the training of teachers of agriculture and of supervisors of agricultural schools; (b) The enlargement of the policy of extending special state aid to schools in the agricultural sections so that state aid shall be granted for industrial training in agriculture.

In addition to these, provision must be made for increased compensation of teachers, as explained in Part I, and the various specific steps taken which are considered in the remainder of the report.

THE PRESENT CONDITION OF AGRICULTURAL TEACHING AND SUGGESTIONS FOR FURTHER DEVELOPMENT

This section has to deal with the part that the various classes of schools from the district school to the university should play in the development of rural education. Under each heading is to be found a brief analysis of the facts that obtain in each class of schools, with suggestions as to the possibilities of future development, and specific recommendations for constructive legislation.

The County Training Schools.

The county training schools were established for the special purpose of training teachers for the rural schools. Twenty-four

of these schools enrolling 1,500 students and costing the state nearly $100,000 annually are now in operation. While these schools are doing their work well along the standard lines, like all the rest of our schools, they have not yet given sufficient attention to the subject of agriculture. If agriculture is to be taught in our rural schools, and the law says it must be so taught; and if the county training schools are to train teachers for the rural schools, then it is clear that upon the training schools rests the chief responsibility for the success or failure of agricultural instruction in the rural schools. Some of the principals of the training schools fully recognize this responsibility and are extending the length of time given for instruction in agriculture from the original meager ten weeks to twenty, and even forty weeks. This is a step in the right direction, but cannot yield satisfactory results alone. According to the course of study in use in most of these schools fifty hours is given to the study of agriculture or one-thirty-second part of the entire time. To your commission that amount or preparation appears wholly inadequate, especially in view of the fact that many of these prospective teachers are city and village girls comparatively ignorant of farm conditions and rural life.

Your commission recommends the introduction at once of at least one unit of agriculture into the courses of study of these schools. Ultimately two units of agriculture should be introduced.

In case favorable action is taken on the matter of special agricultural instructors mentioned in another section of this report (see p. . .), these may be placed with the county training schools by co-operative arrangement with the College of Agriculture. These specialists may give the instruction in agriculture to teachers' training classes and organize short course classes for winter students, for which service, the county should share such proportion of the expense as may be determined by mutual agreement. This plan of utilizing a portion of the time of the proposed agricultural specialists receives the unqualified endorsement of your commission; but if this is done it will be only the first step toward adequate instruction in agriculture in the county training schools. As soon as they can be obtained, at least one teacher in each of these schools, should be specially prepared to teach the agricultural subjects.

The Rural Schools.

There are about 9,000 rural schools in the state which should serve approximately 300,000 boys and girls, since there are not less than this number between the ages of 4 and 20 in their tributary area. A few rural teachers have grasped the true spirit of the situation and, under favorable conditions, are doing creditable work in agriculture, as provided by the law; but the three chief defects of the rural schools are, the small school, a lack of efficient preparation of teachers, and a lack of organization of suitable material for instructional purposes. The last of these defects the College of Agriculture has made an effort to correct. During the past two years it has prepared and sent to one-fourth of the rural schools several economic nature study circulars on special phases of agriculture, deemed of vital importance to the farmers of this state, and along the same lines in which the station is directing its teaching and its extension work.

Given a body of teachers with the right perspective, in full sympathy with agricultural education, and with a goodly number of pupils, the rural schools may readily become potent factors toward the general practice of scientific agriculture. At the same time they may draw much of their material for their instructional purposes from the world about them, create a love for farm life, and add dignity to its labor that will tend to check the tide of emigration now flowing toward the cities. At present the great majority of the teachers are women, brought up in the city, unacquainted with farm life, and much of their agricultural teaching has little weight.

The rural schools need a competent body of young men, brought up on the farm, trained in agricultural schools, and experienced as teachers. With state aid sufficient to encourage the payment of adequate salaries for efficient workers, these schools would reach 300,000 young people annually, and come in close personal contact with not less than 50,000 farmers, or one-fourth the entire number in the state.

Fully one-half of the pupils in these schools are girls and their needs should be supplied by providing instruction in domestic science as effective as that asked for agriculture.

The Consolidated Country Schools.

When two or more district schools are united in a single unit for school purposes, the resulting unit is known as a consoli-

dated school. To such a school the distant pupils are usually transported at public expense.

The larger country school house represents the chief need for the reform of rural education. The isolated, one room country school is bound, under the necessities of modern rural life, to pass away; but its passing will be a slow process. The movement for the consolidation of school districts, and the transportation of pupils to the large school is on, the country over. The advantages of a consolidated school have been demonstrated in too many states and under too many conditions to be open to debate. From the standpoint of administration, finance, general education, and agricultural training, this enlarged school shows the way out of many of the present difficulties. It makes possible the construction of artistic modern buildings, properly heated, ventilated, lighted, equipped, adequately provided with sanitary arrangements, clean drinking water, etc.; in fact, just the necessities of the modern school which the one-room district school does not have, and never has had. More important than these obvious advantages, the consolidated school provides for overcoming the inherent difficulty of the rural school, namely, the attempt to instruct by one teacher, 6 to 16-year-old pupils. Three generations ago, the city learned that it could educate its children more successfully and more economically by placing those of the same ability and near the same age together, with teachers who understood and could teach them as a group. The country has expected of its teachers, generally far less capable than the teachers in the city, the impossible task of satisfactorily teaching children of wide range of age and ability.

It may be stated, that, until the state of Wisconsin sets itself deliberately to the task of organizing country education on the basis of an administrative unit, larger than the school district, as it now exists, comparatively little will be accomplished in the way of establishing vocational training that will contribute largely to the problems of our agricultural population and of agricultural production. Notwithstanding numerous enactments of the legislature during the past ten years, looking toward the consolidation of schools, little or nothing has yet been accomplished in this state in this direction. Without doubt, climatic conditions and geographic situations have hindered the rapid progress of this movement. Nevertheless, there are numerous

localities where no physical obstacles bar consolidation, and where the district schools are too small to be effective.

Geo. W. Knorr, Special Field Agent of the Bureau of Statistics, Washington, D .C., makes out a strong case for the consolidated school in Bulletin No. 232, Office of Experiment Stations. Statistical data collected by him show (a) that the per capita cost of instruction is lessened though the total cost is usually increased, (b) that the average daily attendance is increased, (c) that the pupils remain in school longer, (more years and more days in each year), (d) that the recitation time is increased and the study period diminished, (e) that better wages are paid and hence better teachers employed, (f) that these schools are better supervised, both by the principal and by the county superintendent, and (g) that better material equipment is provided (buildings, libraries, heating and sanitation).

Mr. Knorr has further shown that consolidation has been more easily effected when the county or township is the unit of school administration as in Ohio and Indiana, and that great difficulty has been experienced in effecting consolidation where the district system prevails. The reason is obvious,—it is far easier to obtain a majority in favor of consolidation in a single unit than it is to obtain a majority on the same side of the question in several units.

He further calls attention to the fact that the inevitable tendency, where the district unit prevails, is to get the consolidated unit too small, a decided menace to the whole cause of consolidation. Again, topographical conditions may seriously interfere. There are several other factors not mentioned in the report quoted above that bear upon the Wisconsin situation and which should be mentioned here. One of these is found in the mixed nationality of our citizenship, and the tendency of these nationalities to remain distinct in their own settlements. As yet the foreign spirit is so strong that these colonies do not readily "fuse" as is necessary in consolidation.

All these facts are worthy of the careful consideration of the legislature. Nevertheless there are in Wisconsin a large number of rural schools with less than ten pupils each. In these schools no inspiring work in agriculture or any other subject can be done, as the classes are too small. The per capita cost of instruction sometimes reaches $200 per year. The aver-

age cost of instruction for these small (less than ten pupil) schools (in the state of Minnesota) is $56.49 per pupil, an amount entirely too high when compared with $11.11 for the whole state of Wisconsin. There ought to be some way devised for discontinuing these small schools and substituting more efficient schools.

It follows from the above that the first step necessary for the solution of the difficulties inherent in the district school system is to create a central board of education for each county with power to enforce the necessary consolidations, and in other ways exercise such a degree of administrative control over the public schools of the county (outside of cities) as will ensure adequate educational privileges for all the children of the county. Bills to accomplish this reform have been presented to the legislature of the state on several recent occasions without favorable consideration. Your Commission is of the judgment, however, that the general condition of public education of the agricultural portion of our people fully warrants a marked change of policy, which cannot be effected under the existing school district or township system.

Your commission therefore recommends that a central board of education, composed of five members elected at large, be created for each county; this board to have power in particular, (1) to employ a county superintendent of schools; (2) to consolidate school districts and discontinue schools when such will contribute to the betterment of education of the children; that such consolidated schools receive state aid equal to that granted to state graded schools, viz.: $200 for a two-department school and $300 for a three-department school and that addtional state aid to an equal amount be granted to those schools which introduce not less than two units of agriculture, or agriculture and domestic economy, provided that the courses of study and the teachers be approved by the State Superintendent.

The State Graded Schools.

There are in this state at present 497 public rural schools designated as state graded schools. The schools enroll annually over 45,000 pupils, and receive from the state $118,500 special financial aid. They generally are located in small villages and about 100 of them are doing two years of high school work. Probably another hundred are schools of nine grades each. It

would seem from their location and the class of people whom they serve that they are particularly adapted to giving instruction in agriculture. Wherever the principal of these schools has made special preparation or is possessed of large energy coupled with native ability, the work done in these schools is highly commendable. But as yet they have not begun to realize their possibilities. In most of these schools the work in agriculture is confined to one-half year of formal text book study. These schools might well administer a course offering two years of agricultural work, much of which could be of an intensely practical nature. At the present time the law provides that a state graded school of two departments, having two teachers, if it complies with the provision of the state graded school law, may obtain $200 special state aid each year and that a school of three departments may obtain special state aid to the amount of $300 per year.

Your commission recommends that additional state aid, equal to that now received, be granted to such graded schools as introduce not less than two units of agriculture, or agriculture and domestic economy, provided that the course of study and the teachers be approved by the State Superintendent.

The Township High Schools.

For the township high school the township is ordinarily the unit of organization, but contiguous territories in two or more townships may unite to form a township high school. Theoretically there is no instruction in elementary school subjects connected therewith. The biennial report of the State Superintendent for 1906–1908 has this to say of township high schools:—*"The total enrollment for 1907 was 1164, or an average of 43 to each school. It should be remembered that all except a very few of these schools are located in small villages and the enrollment is made up mainly from the country districts, and fully equal in natural ability to town pupils." And again many of the schools are not equipped and provided for as well as might be desired, but, nevertheless, much excellent work is being done in them and this should be recognized in every possible way."

* See page 24, Thirteenth Biennial Report Department of Public Instruction, State of Wisconsin.

"Their greatest handicap arises from too frequent changes in the teaching force. First class teachers can not be retained at the low salaries which many boards set as their limit, and the result is that these schools are too often material for new and inexperienced teachers to practice upon to prepare themselves for larger places."

This report fully sets forth the present status of these schools. However, nothing is said about the teaching of agriculture in these schools, probably because so little has been accomplished. It is the opinion of your committee that the township high school affords a particularly favorable opportunity for the successful teaching of agriculture. Its tributary area is normally but six miles square. Its pupils are all within easy driving distance from home, and they are sufficiently mature to do this work understandingly and well. Those who complete the course of study are in continuous attendance throughout a period of four years; they are in first hand daily touch with farm life, and have constant opportunity to put into practice at home the interesting lessons that they learn at school. If secondary agricultural education is to be of real significance to the farmers, they must come to realize its importance and take a deeper and more active interest in their township high schools.

The State Superintendent in the report quoted above has called attention to the vital defects in these schools so far as it applies to agriculture, which have inadequate equipment, inefficient and immature teachers. If the state will grant special aid to encourage the teaching of agriculture in these schools, and at the same time provide for the training of mature, efficient teachers, capable of leading farmers as well as their children, it appears to your commission that these schools may become potent factors in demonstrating the possibiltiy and practicability of agricultural teaching in rural high schools.

The Township High School law provides that Township high schools may receive state aid for the salaries of teachers to an amount equivalent to that paid by the townships, limiting, however, the amount which may be paid to a school having in addition to a principal one assistant, not to exceed $900, two assistants not to exceed $1,200, and three or more assistants not to exceed $1,500, and with the further limitation that the total to the township high schools shall not exceed $50,000. Your commission recommends that additional state aid equivalent to that

granted for manual training, $250 per annum be granted to township high schools after having introduced courses containing not less than two units of agriculture, or agriculture and domestic economy, provided that the courses of study and the teachers are approved by the State Superintendent.

The Village and City High Schools

Over thirty thousand pupils are enrolled in the Village and City High Schools. The state contributes $125,000 annually to their support. Twenty-eight of these offer courses in manual training and domestic science, to which the state makes a second contribution of $8,100.

Attention has been called to the fact that our high schools are educating away from industrial pursuits. As yet little has been done with agriculture in Wisconsin as a high school study though twenty-eight schools are now receiving state aid for manual training. The reason for this lack of interest in agricultural teaching lies in the fact that agriculture has not received proper recognition as a means of education. Few persons have prepared themselves for teachers of this branch because there seemed to be litle demand for such teaching; and partly in consequence few high schools have attempted to give much instruction in agriculture for lack of adequate teaching force. Many educators have small faith in the ultimate success of this work. The state gives no financial encouragement to agricultural teaching in high schools. Further it is argued by some that agricultural education is sufficiently cared for in our county schools of agriculture and that the introduction of agriculture in the high schools will destroy these special schools.

Those who favor agriculture in the high school, especially the rural high school, call attention to the following facts:—

1. In these schools the student body already in attendance is recruited largely from the neighboring farms.

2. Their courses of study may be easily modified to include practical instruction in agriculture. Such courses, especially those that are four years in length, admit of a broad general training as well as considerable work along narrower vocational lines.

3. The laboratories and equipment of these schools need but slight modification and but little inexpensive additional equipment to be easily adapted to this work.

4. Agricultural courses of study may be easily and economically administered in these schools.

5. Most states are encouraging the introduction of agriculture into the secondary schools.

6. It is the opinion of the majority of men who have given thought to this subject that agriculture can be successfully taught in the City High School.

7. High schools can not do the work now done by the special schools because they do not serve the same class of students. Hence they will neither injure nor supplant the special schools, but by encouraging a wider sentiment for agricultural education, will give added impetus to the work of such schools.

These special schools will not reach their limit of efficiency until the high schools create a sentiment that will turn a stream of boys and girls in their direction, there to receive the finishing touches of an agricultural education, exactly as they are now doing for the normal schools and business colleges.

Minnesota has recognized the importance of agriculture as a means of high school education and now gives $2,500 annually to each of ten schools offering instruction in this branch, and mechanic and domestic art. So successful has been this experiment that in all probability the number will be greatly increased at the coming session of the legislature. Wisconsin may well consider the wisdom of enacting a similar law.

Your commission recommends that state aid equal in amount to that now granted for manual training, $250 per annum, be granted to village and city high schools that introduce not less than two units of agriculture or agriculture and domestic economy provided that the courses of study in agriculture and domestic economy and the teachers in the same be approved by the state superintendent.

The County Schools of Agriculture and Domestic Economy.

Ten county schools of agriculture and domestic economy may be established under the present law. Five are now in actual operation. A sixth has been voted by the county board of Milwaukee county. Though there is agitation for the establishment of these schools in several other counties, it is probable that the number possible under the present law will suffice until the next meeting of the legislature. These are essentially trade schools and should always be maintained as such.

Besides supplying the real needs of agricultural instruction in their counties, these schools serve a class of people the country and high schools fail to reach; they carry on their own lines of field work among farmers; they organize cow-testing and grain-growing associations; they furnish assistance in planning and erecting farm buildings; they hold farmers' meetings; they are the logical centers from which the agricultural field work service, carried on by the State College of Agriculture, radiates. Their value has been clearly and unquestionably demonstrated and the state should encourage them in every possible way. By some it is feared that the introduction of agriculture into the high schools of the state will injure these special county schools. But your commission wishes to suggest that the introduction of agriculture into the high schools will give the county schools of agriculture an opportunity for development and specialization otherwise unattainable. Past experience demonstrates that these schools reach their greatest efficiency when they develop along departmental lines, with a trained specialist in charge of each department. Their teaching equipment involves as a minimum, a teacher in agriculture, one in manual arts, and one in domestic science. Into such trade schools many high school students will inevitably drift when their attention has been called through their high school instruction to the business of agriculture.

The following table may shed some light on the necessity for modifying our method for the distribution of state aid to these schools:

COUNTY SCHOOLS OF AGRICULTURE STATISTICS.

County.	Total Assessed Valuation.	Cost of Building Estimated.	Total cost Maintainance.	Cost to County.	Valuation per $1.00 cost.
Dunn	$22,472,060	Jt. $20,000	$10,423 70	$6,423 70	$3,500
Marinette	26,049,000	Jt. 20,000	7,156 00	3,156 00	8,400
Marathon	45,692,000	Jt. 20,000	5,933 95	1,975 00	23,100
La Crosse	41,082,000	60,000	14,281 02	10,281 02	4,000
Winnebago	67,715,000	40,000	7,044 56	3,044 56	22,240

County	Pupils Enrolled.	Cost Pupil Total.	Cost to State per Pupil.	Cost to County per Pupil.	Valuation per $1 cost to State.
Dunn	93	$112 00	$43 00	$69 00	$,6.8
Marinette	40	17.00	1.0 00	7.00	6,°12
Marathon	49	121 00	81 00	40 00	11,423
La Crosse	157	91 00	26 00	65 00	10,270
Winnebago	78	91 00	52 00	39 00	16,129

The county agricultural schools now receive not to exceed two-thirds of their cost of maintenance from the state, provided such sum does not exceed $4,000 annually. From the table given it is apparent that those schools which are making the strongest impression on their communities are spending much more than $6,000 a year. It seems highly probable that the matter of state aid to these schools might with advantage be changed from the proportion which now obtains and the maximum amount of state aid be considerably increased. The fact that these schools have no organic relation to the rest of the school system may well be considered. A continuation course at the Agricultural College would afford an opportunity for the graduates of these schools to get a broader outlook, furnish an incentive for them to graduate at the home institution, and give these schools a place in our system of public education.

Your commission therefore recommends that the University of Wisconsin establish in the College of Agriculture a "continuation course" for graduates of county agricultural schools to which its short course graduates may also be admitted.

Your commission further recommends that the present law pertaining to state aid for county agricultural schools be amended so as to change the limit which may be paid by the state to any one school from $4,000 to $6,000; but with the provision that if more than $4,000 be paid by the state that the county shall contribute not less than an equal amount.

The University.

Agricultural instruction in the University began in 1876. At that time the four-year long course was organized. This course was based on the same entrance requirements as all other courses

of the University; it included two years of work in liberal arts as a foundation to the technical work in agriculture which followed in the junior and senior years. This course, when organized, was ahead of the demands of the time, as but few students or parents realized the necessity for formal instruction of this type. The failure to reach the farm boy through the medium of the long course led in 1885 to the establishment of the so-called short course. No stringent entrance requirements were exacted. Taking the boy as he came from the country school, and with considerable experience already in farm practice, this course has been kept upon a practical basis and amounted to a continuation school, although not known under that name. The success attendant upon this educational experiment (for this course was the first to break over the traditional boundaries of agricultural education in the land grant colleges) was not assured from the beginning, and it was only after the most persistent effort that the course began to grow in the estimation of the farmers of the state.

In 1890 a similar type of practical work was started for the training of creamery and cheese factory operators. The discovery of the Babcock test and its application to factory dairying made possible the development of instruction in this line, and the Dairy Course of 12 weeks held in the winter has been crowded ever since its inception.

It is noteworthy that at present nearly all agricultural colleges have adopted the short course idea in some form or other. The increase of students in the short course work has now become so great as to tax the resources of the University. The grade of students attending this work has greatly improved within recent years. In 1909, two college or university graduates, and forty-two high school graduates were in attendance on this course. Seventy-seven students out of 460 had had a year or more high school work. This short course work has exerted a more powerful effect on the state than any other line of agricultural educational work which has been done by the University. It is important to note in a recent census made of its graduates that 91 per cent were engaged in some form of agricultural work, and that 80 per cent were to be found on Wisconsin farms.

The increased attention given to agriculture within the last decade has greatly stimulated interest in regular university

work in agriculture, the graduates finding in practical, scientific, and teaching work, a wide, rapidly developing field for their efforts.

In 1908, a two year "Middle Course" was organized with the same entrance qualifications as for the Long Course (four years of high school work), in which are given substantially the first two years of the Long Course with the substitution of more practical agricultural work for German and mathematics.

With the several types of courses offered the needs of practically all students are here considered. The Short Course takes the boy from the farm directly and on a country school foundation (or higher), gives him an opportunity to continue his training along vocational lines. The Dairy Course is essentially a trade school for the dairy factory operator. The Middle Course is designed for the high school graduate of the smaller town or rural high school who is unlikely to finish the four year course of university training, and who expects to return to a farm occupation. The Long Course offers the best training in the various phases of agricultural endeavor. While many of its graduates are returning to the farms as practical operators, managers or superintendents, others are going into experiment station work, college positions, teachers of agriculture in secondary and high schools, and into agricultural journalism. These higher courses are already closely articulated with the public school system of the state. Doubtless with the introduction of agriculture in the high school curriculum, the relation of the college to the high school will become more intimate. The Short Course is not articulated at present with any portion of the secondary school system. Its work is most nearly allied to that of the county agricultural school, and in the evolution of agricultural training, it is entirely possible that the further development of these schools may diminish the necessity for continued emphasis of this line of instruction, although from present appearances, such a condition is not likely to obtain for some years to come. It would be easily possible to correlate a type of work that could be given in the Short Course so as to extend the work of the county agricultural school by an additional winter's work at the university, as has been previously recommended. Such a mode of procedure would be helpful in aiding these special schools of agriculture in the development of their work.

The University has long recognized its obligation to the farmers of the state, and has for years given largely of its resources in time and energy to the upbuilding of the agriculture of the state. Long before the idea of field work had gained the ground which it now occupies as in integral part of the work of the agricultural college, many lines of activities were under way in which direct help was given to the person in need of such aid.

Beginning with the organization of the Farmers' Institutes movement in 1885, from one hundred to one hundred and twenty meetings have been held annually in the winter for one or two days, the circuit closing with a three day convention known as the Round-up Institute. The talks and addresses here presented are incorporated in a Farmers' Institute Bulletin of two hundred or more pages, and distributed the following season in an edition of 50,000 to 60,000 copies. This work has been closely affiliated with the Agricultural College.

In 1908 the Agricultural Field Work service of the college proper was organized, the work being divided into two general lines: (1) Demonstration field work of various kinds carried on during summer conditions where the farmers can be brought in direct contact with the actual necessary operations and see just how they were carried out. (2) Lecture and Demonstration Courses held during the winter. These courses, known as *Farmers' Courses* are held at the University, the county agricultural schools and other selected points. They range from five to ten days in length and consist of lectures, demonstrations and practical exercises given by a corps of ten to fifteen of the agricultural college staff. These meetings supplement the Farmers' Institute, covering a much wider field and emphasizing the demonstrational features as much as possible. The close co-operation with the county agricultural schools has aided greatly in the development of this work. Through the medium of the local school, the work of the Farmers' Courses can be most effectively advertised, while at the same time the local school is always available as a center of crystallizing into effectiveness the practice recommended.

A most valuable phase of field work has also been developed in the *Farmers' School* which is a more intensive development of the farmers' idea. In this type of work the subjects considered are restricted to not more than two definite lines, as live stock, farm crops, soil problems, etc., and specific class room

instruction for six hours daily is given, attendance upon the same being required by previous registration. The salient feature of this type of field effort is that it is sufficiently intensive to awaken positive effort to put proper methods in actual practice. It is a matter of much moment that these field efforts are exercised where possible through the medium of the agricultural school work. At present in the county schools, and it is to be hoped later in the high schools in which agriculture will be developed, this propaganda work can be best continued. This puts the local teaching agency in direct vital contact with the problems of the farm, thus vivifying the efforts of the instructor and creating a most wholesome relation between the school and the community.

The field workers from the University come in personal contact with the people whose problems are pressing for solution, through the medium of the summer work and also in these winter courses, but the continuous presence of an active local agency to which they can look for help has been found to be of utmost service.

Where such agencies (county agricultural schools or high schools with agricultural departments) do not already exist, it is possible to stimulate effort in this direction through the medium of an agricultural specialist who is an agent of the college located in a restricted area, say a county or a portion of a county. Such a method of itinerant instruction has been developed in the province of Ontario, and also in Bavaria, Germany. Such resident specialists would be wholly comparable to the resident professors in general University Extension who are permanently located in the industrial centers in which the field work is intensively organized. Such an organizer would serve as the local nucleus which in time might be the means of stimulating interest in agricultural education to the point of organizing educational effort directly in the high school or the special county schools. When his work resulted in such fruitage, he could be withdrawn and leave the further development to the local agency.

It is our belief that this system should be tried in Wisconsin and its applicability to our conditions determined. The lines of activity capable of development through such an agency are manifold. As illustration of the possibilities, mention may be made of a single type of work, such as pushing the develop-

ment of the young people's corn and grain growing contests. At present this work has been extended to about forty counties, the College working in co-operation with the county superintendent of schools. This year corn was sent to about 15,000 young people and about 6,000 samples were entered for competition at the various county fairs. Last year educational prizes were granted to one scholar in each contest, which consisted of paying the boy's expenses from his home to Madison and return to attend the special work given these young people at the University. The educational value of this work is already apparent, and there is no doubt but that a wide extension of this propaganda would go far in inciting a permanent interest of these boys in agricultural pursuits.

The main problem in this system of specialists would be to secure men of proper training and experience, for men capable of covering general activities of this sort are the hardest to find of any class. The results already obtained in this work, although only organized a few years, attest the genuine interest that is roused in the minds of actual soil tillers. Not only is this a matter of great importance in itself, but the change which is thus produced in the mind of the parent exerts the strongest possible effect on his whole attitude toward education.

In furtherance of the above plan your commission recommends the insertion of a clause in the agricultural field service bill which will permit the appointment of travelling teachers of agriculture.

Conclusion.

A summary of recommendations contained in the above report upon agricultural education may be found in the general report, page ...